

MONTHLY JOURNAL OF AGRICULTURE.

NO. 5.

NOVEMBER, 1845.

VOL. I.

MEMOIR OF JUDGE PETERS,

FOUNDER AND PRESIDENT OF THE PENNSYLVANIA AGRICULTURAL SOCIETY.

It was the purpose of the Editor of the Farmers' Library, to insert a Biography of Honorable RICHARD PETERS, whose Portrait accompanies this number. The work was commenced, when "*An Address delivered before the Blockley and Merion Agricultural Society, on the 20th of September, 1828, by Hon. Samuel Breck, Vice President of the Society,*" was handed to him. Mr. Breck was the constant associate and intimate friend of Judge Peters, for many years; and in this address he has, with the eloquence of friendship and the truth of history, exhibited the life, character, and political, judicial and agricultural services of his friend.

The Editor is much gratified to insert the Address of Mr. Breck, as he is well persuaded it contains a faithful representation of the distinguished person who is the subject of it, and that it will be acceptable to the patrons of this journal.

Judge Peters, it is well known, like many other writers on Agriculture, pretended to no distinction as a *practical farmer*; neither, we believe, did Arthur Young, or Sir John Sinclair, or Mr. Jefferson, who took the lead in illustrating the philosophical principles involved in the mould-board of a plow; or his son-in-law, Gov. Randolph, inventor of the hill-side plow. Neither was Mr. Madison or Nicholas Biddle, authors of the most beautiful and the soundest essays on Agriculture to be found in our language, entitled to rank among what are called *practical men*! The fact is that, if progress in agricultural and philosophical improvements, which are turned to account by your exclusively "*practical men,*" were to be stayed in its course, depending on them for its impetus, the march of improvement would be a halting one—if, indeed, it did not come to a dead halt!

The valuable labors of Judge Peters in stimu-

lating inquiry, forming associations, and diffusing a knowledge of facts, constituted exactly that sort of service which is apt to be availed of, while its author is forgotten, or remembered only in what was enthusiastic or visionary; whereas such men are entitled to praise, were it only for their amiable and patriotic intentions. But we gladly leave the Judge's merits to be memorialized by his friend. We had looked for this memoir to a quarter whence, though it might have come with more minuteness and equal truth, yet not with more impartial sincerity, than from the friend who, evidently, spoke in the fullness of the heart.

By the bye, we have ever admired that cordial manner of bearing witness to the merits of the dead, which prevails, as far as we know, most particularly in France, where the survivors, in the spirit of truth, and the solemnity of the grave-scene, lay their hands on the lid of the coffin, and attest, in the presence of God and his angels, to the virtues of their deceased friend! How much more genuine and impressive than obituary eulogies, prepared professional, and sometimes *paid for*!

Ours is no freshly-awakened sensibility to the influence of Judge Peters's writings on the landed interest of the country, for we find in the *American Farmer* of the 4th of June, 1819, an editorial notice of him and of Col. JOHN TAYLOR, of Caroline, Virginia, as two gentlemen "highly distinguished in the various walks of learning and public usefulness—whose services in the cause of the plow have done more real benefit to the country than one-half of the politicians in it." So we still think; but we may add that there was this difference between them—that, while Col. Taylor's writings were often involved—sometimes obscuring his meaning—he was an

eminently-successful practical farmer. He exemplified his precepts in a career of great success in the field.

Gentlemen: I may be excused, I hope, for offering of my own accord, to address you on the recent loss of our President. As the second officer in the Society, it becomes, in some measure, my duty, to notice the melancholy event. That eminent and worthy man—so well known to us—so much beloved by us; who, for forty years has so usefully and affectionately associated with us, has, at a good old age, paid the debt of Nature.

Death, perhaps, at no time strikes a victim, however obscure, who does not leave some sorrowing survivor: none so destitute of friends, as to descend to the grave wholly unlamented. How deeply, then, should we mourn the loss of a man so remarkably distinguished as the late President of this Society.

Upon an occasion so solemn, and to us so afflictive, we ought not to be satisfied with an ordinary notice: it is fit that we should dwell, somewhat at length, on the prominent passages of such a man's life; that we should recall to our minds the deeds of patriotism, of public spirit, and general usefulness, which have marked his lengthened career. This I shall attempt; and, howsoever imperfectly, I beg you to indulge me with a hearing.

Richard Peters, who died on the 22d of August, at his residence in Blockley, was born in the month of June, 1744, in the same house in which he expired; and had, consequently, passed, by a few months, the great age of eighty-four. He received his education in the city of Philadelphia; and, on entering the active scenes of life, was a good Latin and Greek scholar, and possessed a knowledge of the French and German languages.

Having adopted the law as a profession, his acquaintance with the German greatly facilitated his country practice; while his intuitive smartness, and steady industry, placed him in the front rank of the young practitioners of the day. He had an uncle who was Secretary of the Colonial Government, and whose office was, as I think, connected with the land department. This uncle was fond of young Peters, and occasionally charged him with a part of the duties of his office. It was here, no doubt, that he became familiar with the land-titles of the province, and laid the foundation of the reputation he acquired in after times, of possessing an intimate knowledge of the land-laws of the commonwealth. These avocations, however, were transient, and did not cause any relaxation in his professional pursuits; on the contrary, they were made the means of extending his acquaintance with influential men in the interior of the colony, and enabled him to follow, very profitably, the Courts of Justice, into all the surrounding counties, where his fluent conversation in German, extensive knowledge of the provincial grants and kindred laws, brought him into practice, and in due time competently rewarded his labors.

On those circuits, he was accustomed to display his unrivaled wit. The playfulness of his conversation, always enlivened by flashes of the gayest pleasantry, was forever quick and unrestrained, and varied by casts of true humor; sometimes as broad and well enacted as the most exaggerated farce, and at others convolved in double meaning, fitted only for the ready per-

ception of the most practiced ear and polished taste. Thus distinguished, our young friend became a favorite with all classes.

It was about the time when this brilliant talent was already conspicuous; a talent that never after forsook him, even whilst age was wasting his tottering frame: it was at this period of youthful buoyancy, that a conference was held with the Indians of the Six Nations, at Fort Stanwix, in the province of New-York. Our lamented friend accompanied the delegation from Pennsylvania. During the negotiation of the treaty, he insinuated himself so much into the good graces of the Indian chiefs, and became so entirely acceptable to them, by his light-hearted jests, and sportive behavior, that even these sedate red men relaxed their rigid carriage, and unbending for a moment the usual severity of their characters, proposed to adopt him into their tribes. The offer was accepted, and Mr. Peters was formally introduced to his new relations, receiving from them, in allusion to his amusing talkativeness, the appropriate name of *Tegohhtias*, which means *Paroquet*.

He used to say, that these Indians called the great William Penn *Onas*, the name of quill, or pen, in their language; whereas, added he, on my adoption, they have been more complimentary, for they have given me the name of the bird and all his quills into the bargain.

Political difficulties with the mother country, now compelled every man to choose his side. Mr. Peters, although rather intimately associated with the proprietary government, which was chiefly royal in its feelings, did not hesitate to separate himself from it, and join the cause of his native country. While many influential members of the bar went over to the king, he stepped forward with zeal in defence of American rights.

Pennsylvania was, in that early day, without a militia. The peaceful descendants of Penn, and of his non-resistant companions, to whose excellent rule and exemplary conduct, this State is so much indebted for its rapid growth and present prosperity, had managed its affairs, even with the fierce aborigines, for nearly a century, without military aid, or any restraint whatever, other than the authority of mild and prudent laws, upheld as much by the probity, philanthropy, and unblemished demeanor of the law-givers, as by any penal provisions contained in the statutes themselves.

But those quiet times were about to be disturbed. Impolitic and unjust notions respecting this country, had got possession of the minds of the British ministry, which led them to adopt a system destructive of our rights and liberties. The cabinet—the parliament—the press of Great Britain, at that time, misunderstood the mutual interests of the two countries, pretty much as they have ever continued to do from that day to this. "Having their ears full of pride and airy fame," they treated us with "scurril jests, and matched us in comparisons with dirt, to weaken and discredit our expostulations." The colonial disputes were pushed to extremity. It became necessary to arm. Mr. Peters volunteered with his neighbors, and when they assembled for the purpose of organization, he was chosen their captain. His military career, however, was short. A mind so gifted, studies so essentially fitted for the civil departments of government, as those of Mr. Peters, soon removed him from the camp to the cabinet. Congress placed him at the Board of War, where his services for

many years, during the struggle for independence, have been acknowledged by a solemn vote of thanks by that illustrious body; services that can have been only properly appreciated by those who knew, like his fellow-laborers, the destitute state of the country, and consequent difficulties in the execution of his duty as adjunct war minister.

Who among us that has associated with our late venerable friend, has not often heard him advert to that gloomy period of our history, in language of trepidation and doubt! At one time the army was without powder, at another, lead; and always food or clothing was wanting. These were daily requisitions, to which no other answer oftentimes could be given, than that the public stores were empty. To illustrate the naked state of our magazines, and mental anguish of our public functionaries at that critical time, I will give you, very nearly in the words of Mr. Peters, a revolutionary anecdote, which I thought sufficiently curious to note in writing, on the 9th of November, 1823—the day that it was told to me by him.

"I was Commissioner of War," he said, "in 1779. General Washington wrote to me that all his powder was wet, and that he was entirely without lead or balls; so that should the enemy approach him, he must retreat. When I received this letter, I was going to a grand gala at the Spanish ambassador's, who lived in Mr. Chew's fine house in South Third-street. The spacious gardens were superbly decorated with variegated lamps: the edifice itself was a blaze of light; the show was splendid; but my feelings were far from being in harmony with all this brilliancy. I met at this party my friend Robert Morris, who soon discovered the state of my mind. 'You are not yourself to-night, Peters; what's the matter?' asked Morris. Notwithstanding my unlimited confidence in that great patriot, it was some time before I could prevail upon myself to disclose the cause of my depression; but at length I ventured to give him a hint of my inability to answer the pressing calls of the Commander-in-chief. 'The army is without lead, and I know not where to get an ounce to supply it: the General must retreat for want of ammunition.' 'Well, let him retreat,' replied the high and liberal-minded Morris: 'but cheer up: there are in the Holkar privateer, just arrived, ninety tons of lead, one half of which is mine, and at your service; the residue you can get by applying to Blair M'Clanaghan, and Holkar, both of whom are in the house with us.'

I accepted the offer from Mr. Morris, said Mr. Commissioner Peters, with many thanks, and addressed myself immediately to the two gentlemen who owned the other half, for their consent to sell; but they had already trusted a large amount of clothing to the continental Congress, and were unwilling to give that body any farther credit. I informed Morris of their refusal. 'Tell them,' said he, 'that I will pay them for their share.' This settled the business; the lead was delivered; I set three or four hundred men to work, who manufactured it into cartridge bullets for Washington's army, to which it gave complete relief."

The sequel of this anecdote shows that the supply was entirely accidental. The Holkar privateer was at Martinico, preparing to return home, when her Captain, Matthew Lawler, who is still living, had this lead offered to him for ballast. Uncertain, however, whether the market would not be overstocked by arrivals from

Europe, he at first rejected it; but after some persuasion received it on board. What thanks do we not owe to such men! Peters, watchful, diligent, devoted—toils unceasingly for his country's good; Morris, generous to prodigality, ventures his all in the holy cause! Happily for America, such noble-spirited citizens were numerous in those days. Providence seemed to have enriched the land with them in every section. As they pass from us, it is assuredly due to their memory, to dwell for a moment on the mighty debt of gratitude we owe them.

Some other passages in the life of the celebrated subject of this memoir, may appositely be placed here, as having particular reference to the post occupied by him during the greater part of the revolutionary war.

On the 18th of June, 1778, Mr. Peters entered Philadelphia, at the very time the enemy was evacuating the place. He went there under a strong escort sent with him by General Washington. His object was to secure clothing and stores, secreted by our friends, who had remained in the city; and to purchase every thing he could from the dealers. The British rear-guard was crossing the Delaware, when he arrived. He succeeded in fulfilling the wishes of the American General-in-chief. Arnold took command of the city a few days after, while Mr. Peters returned to York in this State, where Congress then held its sessions.

"I left," says Mr. Peters, (in a letter to a friend,) "fifty thousand dollars to the order of Arnold, for the payment of the clothing and stores. The traitor seized those articles, and never paid for them, but converted the greater part of the money to his own use: among others, to buy the country-seat of Mr. M'Pherson, on the Schuylkill. Colonel Pickering and I detected him in ordering stores and provisions out of the public magazines, to fit out privateers of his own, and for his extravagant family establishment. An attempt to stop this robbery, produced between me and Arnold an open quarrel. I did not conceal but wrote to head-quarters my want of confidence in Arnold. When his traitorous conduct at West-Point became public, neither Colonel Pickering nor myself were the least surprised at it. He was placed in that command, at the solicitous request of some respectable New-Yorkers, who knew only his military character, which I always deemed overrated far beyond its real merit."

Mr. Peters's exertions became peculiarly meritorious and useful, at the time when General Washington suddenly changed his intended attack on New-York, to that of Yorktown in Virginia. We all know that this movement closed the war. De Grasse, with his fleet, offered to coöperate to the south, provided the American army could be immediately put in motion, to act in concert with the fleet. His cruise off the Chesapeake, he said, would be short; and whatever the land forces intended to do, must be done quickly. At this crisis, there were no battering cannon ready: no means of transporting the army, which lay at Morristown in New-Jersey; no money in the national treasury or military chest. Let the plan of relief be told in Mr. Peters's own words, as extracted from a letter to General Harrison, of the date of 12th of January, 1818.

"In the journals of Congress of July, 1781," says Mr. Peters, "a member of the Board of War was directed to repair to head-quarters, with Robert Morris, superintendent of finance,

and consult with the Commander-in-chief, on the subjects therein mentioned. The member of the board was myself.

"To show the prostrate situation of our pecuniary concerns, I mention that I had not in the chest of the office, without interfering with the daily common demands for contingencies, a sufficient sum for my outfit and personal expenses. Not foreseeing any extra claims for casualties, I had not provided out of my own funds against them. At Trenton, on our way to camp, I lost a horse. I could have ordered one out of the quarter-master's stables; but I avoided the example, knowing the low state of that department. I was obliged to borrow of Mr. Morris the money necessary to replace my loss. On our arrival at head-quarters, we had frequent conferences with the General. I was soon confirmed, in what I had before been convinced of, that our success, in the contemplated attack on New-York, was far worse than doubtful; and that was the plan of the campaign, notwithstanding historical representations to the contrary. Among them, I see recently published, 'a project of Comte Rochambeau,' announcing his having, a long time previously, formed a deliberate plan for the fortunate achievement which closed our war. And yet I *know* that the change of the plan at first fixed on for the campaign, was sudden and accidental. All our conferences were predicated on measures solely relating to the intended attack on New-York."

The change of the plan originated with Washington alone: but let Mr. Peters's own words be again used: "One morning at the beat of reveillé, Mr. Morris and myself, who occupied the same marquee, were roused by a messenger from head-quarters, and desired forthwith to repair thither. We were surprised at the circumstance; every thing having been the evening before perfectly tranquil. We were more so on our meeting the General, who, the moment he saw me, with expressions of intemperate passion, (which I will not repeat,) handed to me a letter from the French admiral, who commanded six or seven ships at Rhode Island: 'Here,' said the General, 'read this; you understand the French';—then turning away: 'so do I now better than ever.' Mr. Morris and myself stood silent, and not a little astonished. The letter informed the General that the writer had received by an express frigate, arrived from the fleet of Comte de Grasse, *at sea*, orders to join that fleet in the Chesapeake, as the *Comte* had changed his destination, on information that the bay of New-York was dangerous for his heavy ships; and if any thing could be done in the southern quarters, coöperation was offered during the few weeks of his intended stay in those waters, to avoid the West India hurricane season. Secrecy was enjoined, and we went our way. On returning to breakfast, we found the General as composed as if nothing extraordinary had happened, and measures concocting for the emergency. I had often admired these conquests over himself. That evening, or I think the next day, a letter arrived from the Marquis de Lafayette, from Virginia, announcing the arrival of the French fleet in the Chesapeake. I have seen it asserted, that this was the first intimation, and an *appearance* of a preconcerted plan was given to it at camp. This is another inaccurate historical fact."

"In the course of the day, I was asked by the General: 'well, what can you do for us, under the present change of circumstances?' I an-

swered, 'please to inform me of the extent of your wants.' Being, after some time, so informed, *generally*, I replied: 'I can do every thing with money: nothing without it; but what can be transported hence must be relied on.' I looked impressively on Mr. Morris, who said, 'I understand you; I must have time to consider and calculate.'"

Mr. Morris shortly after told the general that he had no tangible effects; but if anticipations on the credit of his personal engagements would succeed, he could supply the means for transporting the army from New-Jersey to the Chesapeake.

"In a day or two," continues Mr. Peters, "we left camp, under injunctions of secrecy, (which we faithfully observed,) until the general developed his final objects and measures to Congress."

"On our arrival at Philadelphia, I set to work most industriously, and masked the object for a time. By the zeal and extraordinary efforts of the staff departments, particularly that of ordnance and military stores, sixty pieces of battering cannon, and a greater number of field artillery, were completely provided and finished in three or four weeks, and as any portion of the train was ready, sent off on its way to the southern enterprise. Not a single gun was mounted on my arrival at Philadelphia, nor a rammer or a sponge, or other *attirail*, nor any considerable quantity of fixed ammunition. No European magazine or arsenal could have done more in the time, and under like circumstances. General Knox, who arrived in twelve or fourteen days, had a great share of the merit of this effort. Mr. Morris supplied the *money* or the *credit*; and without derogation from the merit of the assistance rendered by State authorities, it may truly be said, that the financial means furnished by him were the main springs of transportation and supplies for the glorious achievement which effectually secured our independence. He issued his *notes* for, I think, one million four hundred thousand dollars. They passed freely, and at the value of specie, and were in time all redeemed. The *Bank of North America*, which he founded, with money supplied from abroad, and by taxing the credit of his particular friends, and many other good friends to their country, assisted him most eminently. We gave our securities to the amount of a great proportion of its capital stock. My bond was returned to me only a few days ago; amounting, as I think, to thirty thousand dollars. Who, then, knowing these things, can doubt of his having been among the most prominent saviours of his country!"

Those were times, as Mr. Peters adds, "when *wants* were plenty, and *supplies* lamentably scarce." The fearless manner in which property and personal responsibility were risked, is worthy of all praise. It was the tone of the day; a spirit of disinterested love of country prevailed, and a vigilance that no exertions could tire!

In December, 1781, Mr. Peters resigned his post in the War Office, upon which occasion Congress—"Resolved, that Mr. Peters's letter of resignation be entered on the Journal, and that he be informed that Congress are sensible of his merit, and convinced of his attachment to the cause of his country, and return him their thanks for his long and faithful services in the War Department."

After Mr. Peters left the War Office, he was elected a member of Congress, and assisted in

closing much of the business of the war, and of the welcome peace.

Public services, even in our own day, when all is peace and plenty, are too often accompanied by pecuniary loss. What, then, must have been the sacrifice, in the turbulent times to which I have just alluded! It was, as Mr. Peters used emphatically to call it, "burning the candle at both ends." But the reward was independence;—exemption from the heretofore vexatious rule of a government a thousand leagues off; the liberty to steer the vessel of state by our own compass;—this was a prize worth every sacrifice. We know the value of it; and we know how to cherish reverentially and affectionately the memory of those excellent men, who so willingly offered the sacrifice, and so nobly achieved the prize! This cannot be too often repeated.

The war left us in an unsettled state, which the good sense of the people soon put in order, by the organization of a new government, under the present Constitution. The great Washington, our first President, in looking round him for suitable men to fill the posts in his gift, selected Mr. Peters for the judgeship of the District Court of Pennsylvania. This he accepted, although he was desirous to take up his profession, and enjoy some respite from public labor. Since the peace, his fellow-citizens had sent him to the State Assembly, of one branch of which he was Speaker, at the very period, I think, when he was removed to the District Court. It was a new sacrifice to the public good; for I have heard my venerable friend say, that it comported neither with his wish nor his interest to throw up his pursuits at the bar, for an office of such small emolument. He yielded, nevertheless, to the request of the President, and assumed the exercise of its duties, which he continued until his death; being a period of thirty-six years, during which time he was seldom detained from Court by sickness, and never from any other cause. The admiralty portion of his judicial functions has been greatly simplified and improved under his care; and as a jurist in other matters, his decisions have been applauded here, and confirmed at Washington.

The President who placed him on the bench, knew him well, and took great delight in his society. When a morning of leisure permitted that great man to drive to Belmont, the birth-place and country residence of Judge Peters, it was his constant habit so to do. There, sequestered from the world,—the torments and cares of business, Washington would enjoy a vivacious, recreative, and wholly unceremonious intercourse with the Judge; walking for hours, side by side, in the beautiful gardens of Belmont, beneath the dark shade of lofty hemlocks, placed there by his ancestors, nearly a century ago. In those romantic grounds, there stands a chestnut tree, reared from a Spanish nut, planted by the hand of Washington. Large, healthy, and fruitful, it is cherished at Belmont, as a precious evidence of the intimacy that subsisted between those distinguished men. The stranger who visits these umbrageous walks, trimmed and decorated in the style of the seventeenth century, pauses amid "clipped hedges of pyramids, obelisks, and balls," formed by the ever-green and compact spruce, to contemplate this thriving tree, and carry back his memory to the glorious and virtuous career of him who placed it there.

The duties of the District Judge, particularly

when associated with the Judge of the Circuit Court, became sometimes extremely painful. Two insurrections—(the only ones that have taken place since the adoption of the present constitution) occurred in Mr. Peters's district. To aid in the suppression of the first, he followed the army as far as Pittsburgh,—the western limit of his jurisdiction; and there, with his usual promptitude and prudence, very satisfactorily discharged his official duties. In a few years after, he was called on again, to try for treason another set of rebels from the northern part of his district. His associate during part of the time, was the celebrated Samuel Chase, one of the Justices of the Supreme Court of the United States. The trial of these deluded insurgents, and the execution of the two acts of Congress so well known by the names of Alien and Sedition laws, gave great notoriety to the Circuit Court of this district. Its proceedings were narrowly watched by the political enemies of the Federal government, until at length, John Randolph, a member of the House of Representatives from Virginia, thought he saw cause of impeachment in the conduct of its Judges. Articles were agreed upon by the House of Representatives, and sent up to the Senate, against Samuel Chase; and great pains were taken to include Mr. Peters. Indeed the House inserted his name at one time; but on proper investigation, it was withdrawn, under a conviction that no cause of accusation existed: on the contrary, when the examination took place, it was found that his judicial course had uniformly been marked by prudence, decorum, and moderation.

The violence of the times, the irksomeness of the Court duties, the vituperative or thankless voice of the then governing party, might have discouraged an ordinary mind; or at least have limited its action strictly to the business of the bench. Not so with Judge Peters. Almost at the very moment, when political strife was at its height, we find him promoting, and chiefly directing, one of the most beautiful and most useful improvements in the State. I allude to the permanent means of communication, created in the year 1803, between the city and the country, by the erection of the great bridge over the Schuylkill, at the end of High-street. It belongs especially to us who reside on the west side of that river, to assert the merit of the citizen who originated, superintended, and completed this noble work. Many of us recollect the interruption, the delay and the danger of the passage, twenty-five years ago, now so fully obviated by the splendid structure placed there at a cost of three hundred thousand dollars!

Judge Peters, the first President of the company at whose expense it was built, commenced his service in this work, with a zeal and courage which alone could conquer the natural difficulty of the water piers; and it is proper to notice here, as illustrative of that gentleman's sagacity and foresight, that to his perseverance (I had almost said *management*) do we owe the permanency of that bridge; for, the company, discouraged by the great expense, had resolved not to cover it; and governed by this determination, left it for two or three years wholly exposed to the weather; so that had not Mr. Peters, by constant solicitation, persuaded them to give it its present defence, its usefulness would have terminated in about twenty years; when, decayed and rotten, it would have fallen into the river. But with the cover which now protects and ornaments it, it will last a century or more.

Before Mr. Peters became a Judge—indeed, soon after the War closed in 1785—he visited England. His travels in that country and the adjoining kingdoms under British rule were extensive. He had in charge, on this occasion, a commission somewhat of a public nature, and which introduced him to the acquaintance of the Primate and principal Prelates of the English Church. Before the Revolution, the Protestant Episcopal Church in this country, of which Mr. Peters was a member, was governed by the Bishop of London; but when our political connection was dissolved, no Protestant Church here would consent to be regulated by a foreign diocesan. Mr. Peters, therefore, was commissioned to obtain the consent of the British prelates to ordain to the holy office of Bishop three priests of the American Episcopal Church, and thus give to it a canonical succession. An act of Parliament had already been obtained by the Bishop of London, to enable him to dispense with such of the usual requisitions as were inconsistent with the engagements of certain citizens of the United States who had applied to him for *holy orders*; and, about the time the higher question of succession was agitated, the same subject was brought before the Danish Government, in consequence of a conversation between Mr. Adams, our then Minister to Great Britain, and the Danish Minister to the same Court, to which a favorable answer was given; so that the Danish Church stood ready, in case of difficulty, to confer on our Church the necessary powers of Episcopal succession. But it is believed that this incident had no influence on the conduct of the British Government or Church, both of which are represented by Mr. Peters, in a letter from England, dated March 4th, 1786, as favorably disposed; and subsequently confirmed by the courteous and friendly reception of Right Rev. and venerable Bishop White, and his colleagues, who found the Archbishops and all the Bishops who were consulted on the business, acting with the utmost candor and liberality of sentiment; so that it is obvious that the English prelates were, from the first, ready and desirous to convey the succession to the American Church; and that the only condition they made was, that there should not be such a departure, either in discipline, worship, or doctrine, as would destroy the identity of the two Churches in their *spiritual* character.*

While we admire the Christian feeling which characterized the hierarchy of England at that period, it may not be thought inopportune to testify our regret at the prejudice which has grown up since, among clergymen and theological writers, when they have occasion to refer to the American Church. Catching the illiberal spirit of the lay-journalists, the conductors of some of the British periodicals, devoted to Church matters, speak of our country in language coarse and unbecoming; and one theological journal, of wide circulation, and published in London, reviews a sermon of the Bishop of New-York, by denying to him, throughout the review, the prelate title of Bishop—as if too sacred or of too high a dignity for a people whom it purposely treats with disrespect. This critic sneeringly calls the widely-extended and flourishing Episcopal Church of the United States, governed as it is by ten Bishops, and more than

four hundred ordained clergymen, planted over thousands of miles—sneeringly calls it, I say, “an obscure Church, on the borders of a wilderness.”

Mighty as has been the growth of this empire—prosperous as have been all its institutions—a wilful blindness and inveterate prejudice—I had almost said, a propensity to falsehood—seize on the minds of the writers of England, whenever they refer to our happy land. Why are these taunts so often the theme of their statesmen, as well as their critics? Can they be aware of the injustice they do us?—of the alienation of affection and kindred feeling which they work here? Or, do they grieve and scold because we get along too fast for them? If it be envy that produces this tone of sarcasm and contumely, I know not when it will cease; but if it arise from pride of wealth and numbers, it must soon stop; for the day is near at hand when an equality of power in population and riches will place us on a par, and then they may think us fit to be counted “as of the same father’s house.”*

We now approach, gentlemen, a period in the life of our departed President, which brought us into close intimacy with him. It was a long period of wide-spread usefulness, in which he moved almost without a rival. As a practical farmer, Mr. Peters had, from time to time, communicated the results of the experiments made at Belmont to such of his neighbors as chose to profit by them; but he had not written much, if

* Let us hope that this disposition to disparage our country—and which, truth requires us to admit, is fully reciprocated—far from corresponding with, is contrary to the general public sentiment of the two countries. Demagogues there will ever be, in all countries, ready to excite and then pander to national antipathies. Let us hope that evil disposition does not prevail, on our side of the water, to a greater extent or in higher circles than in England. The well-informed, the loyal, the patriotic, and the virtuous, on both sides, sincerely wish for the maintenance of justice and of peace, and for the prosperity alike of both countries. That England looks to us, through a direct trade, for the material of her great branch of national industry, implies that she is our best customer; and, the more she prospers, the more she can buy—for the more she will consume. If, in some things, we are rivals in foreign markets, let it be the fair rivalry of industry and enterprise. There will yet remain points of reciprocal interests, enough to maintain the interchange of good offices, and to beget that desire, each for the other’s growth and welfare, which is cherished—let us hope—even on nobler grounds than self-interest, by the wise and the good of both countries.

In some proof of the existence of that feeling in high quarters, we take leave to submit an extract from a letter, with which we have ourselves lately been favored, from a nobleman of the highest rank, and, at the same time, one of the plainest, most practical and actively useful *farmers* in all England:

[Ed. Farm. Lib.

WISETON, August 9th, 1845.

“Anything which proves a kindly feeling toward me from the citizens of the United States, always gives me great satisfaction—it being impossible that any Englishman can desire more earnestly than I do that the friendly relations between our two countries shall be permanent.”

* This statement was furnished, in substance, by a most respectable Episcopal clergyman

anything, upon Agriculture, before the year 1797. His first publication was then made, and contained a statement of facts and opinions in relation to the use of gypsum. This pamphlet circulated widely, and produced such a change in husbandry, by introducing the culture of clover and other artificial grasses, as gave, we all know, a magical increase to the value of farms. Estates which, until then, were unable to maintain stock, for want of winter fodder and summer pasture, were suddenly brought into culture and made productive. Formerly, on a farm destitute of natural meadow, no stock could be supported; and even where natural meadow existed, the barn-yard was exhausted to keep up sufficient fertility (in the absence of irrigation) to feed a very few horses and black cattle.*

Such was the situation of our husbandry for some years after the Revolution. It is proper to advert to it, that we may understand the full extent of our obligation to the Judge. In the year 1770, he was shown the effects of gypsum on clover, in a city lot, occupied by Mr. Jacob Barge, on the commons of Philadelphia.

The secret of its powerful agency came from Germany, where it was accidentally discovered. Mr. Peters obtained a small quantity, which he used successfully, and gradually promoted its consumption, until, by his example and his publications, the importation from Nova-Scotia alone, into the single port of Philadelphia, increased to the enormous amount of fourteen thousand tons annually. This was before the discovery of that fossil in the United States.

Inquire in the counties of Chester, Lancaster,

* Next after the invention of the cotton-gin, by Whitney, few things have done more to add to the value of agricultural productions than the use of gypsum, or plaster of Paris; and, above all other persons, Judge Peters contributed most to dissipate the hesitation and doubts that generally stand in the way of great innovations, such as that was. To believe that a bushel of sulphate of lime, spread on an acre of land, would have such effects as were described, seemed to promise nothing but ridicule for those who could entertain it; but its application, at that rate, on clover sowed on the poorest land, two successive seasons, enabled the farmer to raise from six to eight barrels of corn, and raised the price of his land accordingly.

What has most perplexed inquiring minds, even to this day, has been the fact that, while it acts with wonderful force on one farm, it is inert on another, perhaps adjoining. If it improves land by drawing nourishment for plants from the atmosphere, say they, why should that not be attracted by any other manure? and why should gypsum not exert that influence in one locality, or on one farm, as well as on another? The truth is that Agricultural Chemistry has not yet done its office on this point, though we doubt not it will; and our anticipation is that it will discover, in the land upon which it has no influence, the presence of some chemical agency in the soil, which neutralizes and destroys the virtue of the gypsum.

In the South, it is ascertained, by practice, that its action is equal on the various leguminous crops, and as powerful and as generally used on the pea as on the clover crop.

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and others around us, where clover is so beneficially cultivated, how much is due to that excellent man for the great pains he took to extend the use of gypsum? On this subject, I very recently transmitted to the Judge a testimonial of gratitude from one of the most intelligent persons of Lancaster, who unhesitatingly ascribes to Mr. Peters's book on plaster, and his other agricultural essays, the merit of having produced a good part of the rich cultivation for which that country is so celebrated. But his rural labors were not confined to the tith of the ground—to the mere variety of grasses, or alimantal improvement of the soil which produced them—for we find him zealously employed in mending, by crosses, the breed of sheep and other animals. To him was confided the care of the broad-tail Barbary rams, procured at Tunis, by General Eaton. The Judge placed them advantageously, and pressed on the farmers, by repeated written exhortations, the propriety of using them.*

In order to appreciate properly the industry of this gentleman, in treating on husbandry and matters auxiliary to it, we must consult his voluminous communications, published in the Memoirs of the Philadelphia Agricultural Society. Take, for instance, the first volume. There we find him discussing, with his accustomed animation, and clear and elegant style, the following topics:

- On Hoven Cattle.
- On Peach Trees.
- On Yellow Water in Horses.
- On Gypsum.
- On the thickness, cement, and materials of Walls.
- On Orchards.
- On Coarse Flour.
- On Brown Bread.
- On the Force of Habit, as it relates to Esculents.
- On new Herbs and Shrubs appearing after firing Woods.
- On Trench Plowing.
- On Hemlock for Live Fences.
- Remarks on, and Plan of, a Stercorary.
- On Changes of Timber and Plants.
- On Races of Animals Extinct.

These numerous articles, so various in their character, are, as I have said, contained in the first volume, and are all copiously and ably treated by him. The succeeding volumes are no less rich in original essays on the science and art of Agriculture, from the same prolific pen. Perhaps it is not estimating the *quantity* of his labor too high, if we place it at one-fourth of each volume; the *quality* of these productions must be valued according to their wide circulation and great popularity.

This distinguished citizen, always vigilant in promoting objects of public utility, founded our Society, and presided over it from the day of its creation until his death. You, gentlemen, will, one and all, I confidently assert, most readily and most gratefully bear witness to his constant solicitude for the advancement of the objects of

* For a history of these sheep, see letter from Judge Peters to J. S. Skinner, then Editor of the American Farmer, Baltimore—dated August 14th, 1822—which letter will be found next after this memoir.

Beside the writings referred to by Judge Breck, the volumes of the American Farmer contain others of great interest.

[Ed. Farm. Lib.

our association. How often has he pressed us to attend to them! His superior sagacity could discover a usefulness in labors which we had not before thought important. When, at length, we yielded to his wishes, and consented to register the occurrences on our farms, how much information was elicited! The improvement derived from this mutual examination was acknowledged by us all. It is much to be regretted that these business-like meetings have, of late, been few and far between. But such as they were, and transient as they now are, I dare refer to the records for proof of their solid worth. What though they have been followed by occasional listlessness, indifference, or non-attendance, that baffled the later efforts of our good President—may we not remember that our early zeal, though short-lived, was salutary!—Can we not revive it? Let us try, if it be only to show our love for the man who first inspired it. Our opinions on rural matters—our knowledge of agricultural facts, then so freely communicated, stand on record; we then possessed the attributes, as well as the name, of an Agricultural Society. Those communications evinced, by their variety, their practical meaning, their good sense, and, not unfrequently, their novelty, the rich fund of information among us in the concerns of husbandry, and show how profitably it may be again employed. We have but to will it, in order to restore it to its former usefulness.

Having endeavored to portray Mr. Peters as a patriot, a legislator, a jurist, and a farmer, it

remains to speak of him as a man in social life.

Unceremonious, communicative, friendly—who who have so often shared in the delight of his unequalled companionship, under this roof, and at the festive board, when, at our annual dinners, he gradually rose, in hilarity and noisy mirth, with the wine-drinkers, by drinking himself, as he would playfully say, like a fish—accompanying our libations of Madeira with draughts of water—we can testify to his wonderful flow of wit, joviality, and laughter-inspiring spirit. It was on those occasions that, for a long evening, “he talked with fluency mere pun,” mere joke and frolic. He needed no artificial aid, where Nature had been so liberal; and, with his goblet of water by his side, he kept pace in merriment with the company he was exhilarating; and this, too, when an octogenarian! Indeed, it was only with the lamp of life that this love of jest became extinct. Yet, so well-timed, in such good taste, was all this gaiety, that no want of dignity or decorum was ever known. It was a spontaneous effusion, so natural and so pleasing that it made you love the man you already respected.

As a husband—a parent—a neighbor—a sincere Christian—there was, in reference to Judge Peters, but one voice. Every one united in praising his domestic and religious virtues.

Here I conclude, with many thanks for your indulgence, and the hope that a life so usefully spent will be contemplated by us, as eminently worthy of imitation—if not in all its varieties, at least in such portions as we may be able to copy.

TUNISIAN SHEEP.

WE have great pleasure in recording the following authentic history of an importation of Tunisian Sheep, and we particularly desire that our correspondents would furnish us with accounts, as detailed, respecting every importation of Live Stock, which has come within their knowledge; and especially, when the facts so conclusively demonstrate the tendency of agricultural pursuits and subjects to inspire all who embark therein with a liberality of feeling and design, which, so far from admitting the idea of venal rivalry or sordid monopoly, bid every one generously welcome to the fair enjoyment of new sources of profit.

[Ed. Am. Far.]

BELMONT, August 14, 1822.

Dear Sir: In your paper of the 2d instant, I see queries respecting the TUNIS BROAD-TAILED SHEEP. “How many were received! and were any sent into other States!”

I have given a full account of these sheep in the 2d volume of the *Philadelphia Agricultural Memoirs*. My opinions continue unaltered; and I had supposed the subject to have been exhausted. I have no desire to revive it, farther than to answer your queries as fully as historical facts require; and that with no personal objects. I do not relate the circumstances to blazon my own exertions; but, under a persuasion that a useful moral may be drawn from them, I am the only person acquainted with the whole subject, to which I do not mean to give more importance than your inquiries seem to elicit.

Col. Pickering, with his accustomed candor, has published, in *Poulson's* paper of the 4th or 5th of July last, what he thought proper as to himself. The paragraph has not his signature; but he informed me of his having written it; and I mention it, for reasons operating with me.

I understood, from Gen. Eaton, and so did Col. Pickering, that eight or ten sheep were shipped; but only a pair arrived. Being far preferable to the coast sheep, they were procured by Gen. Eaton, (as he informed me) off the Dey's farm in the interior of the country, by the Dey's permission, as a compliment to the United States. It was therefore proper that they should pass under the direction of the Secretary of State. They arrived in the *Delaware*, in a public ship, and of course were placed by Col. Pickering in the neighborhood of the port of arrival. It would have been out of character with him, (only one pair having arrived) to have sent them into any other State; nor would he have so done, in whatever way he might have received them. I was informed that the rest of the shipment perished at sea. Capt. Geddes, to whose care they were committed, had a character too respectable to permit any supposition that he was either negligent or selfish; yet Gen. Eaton expressed much dissatisfaction and chagrin.

The burthensome, though not regretted, deposit was put into my hands by Col. Pickering. Considering myself as a kind of trustee, and always desirous of spreading through our country

the benefits of such acquisitions, I refused offers of emolument, though no terms forbidding personal profit, were made. I gratuitously dispersed the breed, not only in Pennsylvania, but into the neighboring States; at no small trouble and expense to myself. Several victualers, finding the superiority of the mutton over that of all other sheep, both in quality and price, made up a purse, and offered any sum I chose to fix for the Ram. I refused the proffer; and after his covering, during several seasons, great numbers of ewes sent to my farm, and there pastured and served without charge, he was conveyed to my late friend, Gen. Hand's farm, near Lancaster, where he was killed by dogs, after propagating the breed extensively. The ewe met the like fate on my farm; having yeanned a healthy lamb at sixteen years of age.

Chancellor Livingston's sale of two Merino sheep for \$3000, gave impetus to the ardor which had begun to operate in favor of that breed. Had he given them away, the effect would have been far otherwise, on the minds of both farmers and speculators. *Voilà les hommes!* Fancy paints profits in proportion to price paid. Small gains are counted on gifts, or cheap purchases.

Discovering the impolicy of continuing (however beneficial my distributions may, at first, have been,) gratuitously to bestow lambs, and of my other modes of dispersing the breed without charge; I encouraged my neighbor, Thomas Bones, in raising fine Broad-tailed Sheep from my stock, for sale on his own account. He did great justice to my confidence in him, and sold considerable numbers; many whereof, at their request, I selected for the purchasers. Many were sent to South Carolina, as I mention in our volume. *The credit of, and demand for the sheep, were really enhanced by the prices paid for them;* though those prices were moderate indeed, compared with those of Merinoes, which overwhelmed the Tunisians, in public opinion, during the Merino-fever.

Country people do not value an article given away, presuming that it is held by the donor in small estimation; and in this they are not singular. The usual short-sighted practice among farmers, of selling to victuallers, or in the mar-

ket, the best lambs and sheep, and keeping only those unsaleable, deteriorated the breed most lamentably. My tenants, who had the charge of my flock, had their share in this culpable propensity. Several butchers posted breeders from my stock in Jersey and Delaware. The progeny were slaughtered for the market. This also diminished the multiplication of the breed. Yet I was surprised by the information I frequently received, at the numbers produced from an original pair, even under circumstances not always encouraging.

I know of no other importation of Barbary sheep, contemporaneous with the subjects of this account. Long after the arrival of the pair mentioned, I was informed that Capt. Baron had brought some broad-tailed coast sheep into Virginia. But from the accounts of them I had heard, they were inferior to the Mountain sheep of Tunis; and so are all other African sheep which have fallen under my notice. The sheep of the Eastern countries, Asia and Africa, are generally, (with some exceptions) broadtailed.

Many years ago I saw in England, in the King's flock at Richmond, several of the *Laticandæ*. Some of them with cumbersome trailing tails, borne on little wheel carriages, dragged after them. None of them, in appearance, equal to the Tunis Mountain sheep. In my old, learned, and valuable work,—*Scheuchzer's Physica sacra*—there are plates, admirably executed, of victims for the Jewish altars. Among them, trailing breadtails similar to those I saw at Richmond. So that there are many varieties of the *Laticandæ*; and the success of breeders entirely depends on the selection of the valuable kinds.

The name, (as you seem to require it,) I gave to the Ram, was *Caramelli*, that of the ewe, *Selima*. They will, perhaps, become memorable as the first emigrants to our country, from this branch of the extensive family of the *Laticandæ*.

Not knowing exactly the object of your queries, I may have enlarged unnecessarily. But you may gather what you deem satisfactory for any purpose you contemplate. Yours truly,

RICHARD PETERS.

JOHN S. SKINNER, Esq.

THE COTTON PLANT....ITS HISTORY AND USES.

(Continued from page 181.)

ON its introduction into Georgia, the cultivation of long cotton was confined to the warm high lands of the Sea-Islands: these portions of the plantation are still everywhere preferred, and almost invariably return the largest yield, though their exhausted condition would seem to invite the more general tillage of the lower grounds. A few seed were either deposited in small hills,* about five feet apart, each way, or in holes made in the level land, separated at that distance. The spaces between the hills or holes were kept clean by the hand or hoe—the plow then, as now, was but little used. From the very limited number of plants that this plan insured,

it is manifest that, in despite of the natural fertility of the soil, the harvest must have been meagre. Except in isolated instances, it rarely equaled 100 lbs. to the acre, which, at four acres per hand, gave but four hundred pounds to the hand. In 1794, a Bahama planter, who was traveling for his health, arrived in Georgia: he advised the growers to sow their cotton much thicker. This advice was unheeded by all, except Thomas Spalding of Sapelo Island, then a young man, and who has since largely contributed by precept and example to further the agricultural interests of his native State. He adopted in full the West India mode of drilling his seed along the ridge, and, by leaving the plants about six inches apart, he realized from a field of sixty acres, favored by a propitious season, the remarkable product of 340 lbs. of clean white

* The holes made in the ridges to receive the seed are still strangely called "hills" by almost every planter.

cotton to the acre. His success, with the previous adoption of the ridge-husbandry of Tull, introduced into Georgia, it is believed, by Hamilton Cowper and James Spalding, of St. Simon's Island, annulled the doubts of the wavering, and soon rapidly extended the culture of this valuable crop. In one year the revolution was accomplished, and from that time to the present, the distance of the plants asunder is regulated by the natural or artificial strength of the land—varying from eight to twenty-four inches, while the ridges, though separated in some of the Parishes four feet, and, in particular locations, six feet, are in general five feet apart. These, unlike the old usage, have for many years been made and preserved of an oval form, and large and high; first, the more effectually to subdue the grass, and to retard its early germination; secondly, to prevent the exposure of the lateral roots and fibres during the washing rains of summer; and thirdly, to keep the field as dry as possible; no plant probably requiring less moisture, particularly at the fruit-bearing season, than cotton. Although they increase the friability of the soil, which is a serious objection on very light lands, yet, the advantages just enumerated, the recent practice of leveling the ground, and the results of experiments, showing the decided superiority of large over small ridges, in very wet or dry weather, have constituted the former an almost universal expedient, at least in the lower Parishes. In relation to the early practice of depositing in the holes only three or four seeds, a practice common in Spain in the 12th century, experience has shown the wisdom of using a much larger quantity. Cotton is liable to so many casualties when young, particularly in the vicinity of the ocean, where the annual injury from winds is greater than is usually apprehended, that, except by the growers of the best descriptions of that article, from a half bushel to a bushel of seed to the acre is commonly sown. The excitement concerning superfine cottons, and the ambition of the planter to excel his neighbor in price, induce annual selections to be made; but as this task devolves on the proprietor, and can be done only in a limited way, a parsimonious use of the seed is the necessary result: hence, less than one quart to the acre is occasionally put into the ground.

The method of cultivation was very various, and without method, until about the year 1802 when it assumed a regular form in this State and Georgia. Then the crop was worked four times—the latest hoeing being from the middle to the last of July. The hoeings now are more frequent, from five to seven being usually given, and are begun earlier and finished sooner. The point appears to be conceded, that, when the plant puts out fruit freely, which may be expected early in July, out-door labor should cease, especially if the season be wet.

It has been already remarked, that the plow was practically unknown to the first growers of long-staple cotton. This is still true, although a half century has elapsed. The ridge-system; the levelness of the ground, requiring therefore numerous drains; the small quantity of land, from $3\frac{1}{4}$ to 4 acres, cultivated to the hand,* which, from its lightness, is so easily and so much better attended with the hoe; and the impossibility of gathering the cotton as rapidly as the field may demand, if, with plows, the

usage embraced a larger number of acres—all seem to render the aid of this great agricultural implement utterly useless in the culture of the crop. In the breaking up of the soil, however, and, as an assistant, in forming the ridge, the plow is universally employed, except on the Sea-Islands, where only, by a few planters, is its value, in the latter operation, fully acknowledged.

The task in listing was formerly half an acre; in ridging, three-eighths of an acre; and in hoeing, half an acre. The present tasks are less, except in hoeing, which is the same. The beds are still changed as often as the same field is tilled. In Georgia, the attempt to make them so far permanent in low grounds as to continue for six or eight years, has in a few instances been successfully tried.* There is scarcely a doubt, from their depth of mould, and extreme richness in vegetable ingredients, that the experiment would succeed in the marsh-lands of South Carolina. The application of this plan to poor soils is forbidden by the necessity of furnishing them annually with fertilizing matter, which should be thoroughly incorporated with the earth.

Encouraged by the anticipated results of experience, if not in every instance by the actual product of their fields, our fathers continued to cultivate the grounds which their sagacity first selected for the new crop. After several years of exhausting tillage, a radical change in their plan of operations, it was apparent, must soon take place. Unaccustomed to imbibe information from books concerning their vocation, the plain alternative of resorting to virgin soils was adopted. This, with regret and mortification be it said, is still the popular expedient, except where necessity, that kind and blessed encourager of the arts, forces the reluctant to another, and, as experience testifies, far more profitable scheme. The land which could be the most readily prepared, was invariably chosen—the best, requiring a large expenditure of labor, neglected. Only recently have the swamps of some of the Parishes, and the immense tracts which lie along the line where the salt and fresh waters meet, arrested the notice of the cotton grower. These alone are capable of yielding an amount of cotton wool equal to the yearly exports of the State. Whether the enterprise of the agriculturists is adequate to the task of draining and embanking them, the future will develop. To those who have been engaged in this patriotic work, the encouragement for farther trials, on a more extended scale, is great, if not decisive.

Notwithstanding the woods every where, and the marshes, furnished an abundant store of suitable aliment, still, in his early efforts, the industry of the grower did not extend beyond the narrow limits of manuring his root potato field, comprehending the one-fourth of an acre to each laborer. There were no instruments to mow the salt grass, rakes for collecting leaves, nor carts especially designed to convey the vegetable offal to the cattle-pen. On Edisto Island, where the system of tillage is admitted to be good, and where probably as much enriching matter is dis-

* A larger quantity per hand could not perhaps be manured.

* "Twenty years ago," says Mr. Spalding, in a recent letter to the writer, "upon purchasing some river-land opposite to Savannah I adopted permanent ridges, planting a row of corn and a row of cotton, alternately: these ridges had stood nine years, when my son sold the plantation, giving, as I think, the best cotton and the best corn crops in Chatham county."

tributed over the land as in any other part of the United States, there was, in 1822, not one plow or scythe—the largest plantations had not more than two or three carts, and the utility of oxen, in practice, was absolutely unknown. Now, a cart and mule, or a yoke of oxen, to every six workers, is common; labor-saving machines abound; and every acre of cotton, and generally of provisions, is provided with, what at least is supposed to be, a proper quantity of appropriate pabulum. This salutary reformation in the husbandry of this small section of the State, was effected mainly by the establishment of an Agricultural Society in the year just alluded to. All that has been said in reference to Edisto, is applicable to most of the Sea-Islands, and, in a more limited sense, to a majority of the Parishes.

The first person in South Carolina who directed the planters' attention to the subject of manures, was Col. Thomas Shubrick. In a series of essays, published about the year 1800, he recommended the drifted wreck that is thrown up by the tides. From its use, perhaps improperly employed, no essential benefit was derived, but it accomplished the object of creating reflection and a free interchange of views among those who were most likely to lend their aid in furthering the design of this patriotic citizen. From that time, ephemeral communications on the proper food of plants, and its kindred questions, occasionally met the public eye. However liberal were the contributions of the Agricultural Society of South Carolina to this branch of agricultural improvement, it is certain that the almost simultaneous movement made by a large portion of our planting interest, concerning the renovation of land by animal and vegetable matter, is unquestionably to be ascribed to the writings of "Arator" by John Taylor of Virginia. The letters over that signature originally appeared in a newspaper. In pamphlet form they were circulated in this State in 1808. The number of subjects discussed; the important facts developed; the well-digested reasoning in support of the practices recommended for adoption; added to the high and intelligent source whence the essays originated—all concurred to render "Arator" an instructive and popular treatise. The advice of the writer on several points was not only promptly followed, but to this day many of his propositions are considered agricultural axioms. In relation to this State, it was not until about 1825 that manuring may be said to have been systematized. By the force of circumstances, the sea-board set the example,* which though strongly urged by the slender returns of their fields, is still apparently unheeded by many of the Parishes and districts.

Of all the fertilizing materials for the black seed cotton, marsh mud is held in the highest estimation; not for the reason of its abundance and contiguity to plantations, but because if the proper kinds† be judiciously used, it is the most profitable and certain in its results. It contains more nutritive and other valuable properties than any other natural compound,‡ and is specially adapted to light sandy soils.

Salt mud, as a garden manure, was employed in South Carolina in 1801. Judge William John-

son states, that in that year he commenced his experiments with it, and after repeated trials, arrived at the conclusion that it was a great meliorating agent.* It is said, that as far back as 1797, the late Gen. Vanderhorst was practically acquainted with its value.† The merit of its discovery, however, as a fertilizer for cotton lands, seems to be due to the late James King of St. Paul's Parish. By him it was freely used before the late war with Great Britain.‡

Until within a few months, the agriculturist of South Carolina was ignorant practically, and it might be added theoretically, of the efficacy of calcareous manures. It is true that lime as an improver of the soil has been long known to a few of our cotton planters. In 1800, and again in 1803, it was used by Kinsey Burden, then of St. Paul's Parish. Though his efforts with a new enriching ingredient were attended with the most signal success, it does not appear that the same gentleman ever afterwards resorted to it. A new era fortunately has commenced, and before another year has passed, lime and marl will be the most common, and the most extensively employed, of all the natural means for resuscitating exhausted lands. To Edmund Ruffin of Virginia, late editor of the Farmer's Register, and now by the authority of the Legislature Agricultural Surveyor of South Carolina,|| all the benefit which shall accrue to individuals and the community by their application will have to be ascribed. His discoveries show, that marl exists in inexhaustible quantities throughout the lower country, and that calcareous matter in some form is widely distributed over the State.

Without an acquaintance with the component parts of soils, and our great staple crop, the appropriate pabulum to the one for the support of the other, it is manifest, cannot understandingly be applied. The first effort in this State, emanating from a public body, to obtain light on one of these interesting topics, was made by the Agricultural Society of St. John's Colleton.

¶ We had intended to conclude this article in this number, but owing to the length of other articles that demand immediate publication by us, we are compelled to postpone a portion of it until our next number. [Ed. Farm. Lib.]

*Southern Agriculturist, vol. ii. p. 483.

†Ibid. p. 547.

‡Ibid. p. 399.

§The antiquity and advantages of marling may be gathered from the following passage, which occurs in Fitzherbert's treatise entitled *Surveying*, first printed in 1539. Speaking of the improvement of bushy and mossy ground, he says: And if there be any marle pyttes that have been made of old time within the said close, than when the landes begun to weare, if he have not sufficient of such bushy and mossy grounde to breake up and sowe, than there would be newe marle pyttes made, and the landes new marled, the which is moche better than outhur donge, mock or lyme, for it will last twenty yeres together, if it be welie done, and shall be the better while it is land. And I marvaile greatly, that in the common felde, where of old tyme hath been made many great marle pyttes, the which hath done moche good to the landes, that now a dayes no man doth occupye them ne make none other, and they nede not to doute, but there is marle now as well as was then.

||Mr. Ruffin was appointed Agricultural Surveyor with a salary of \$2,000, at the December Session, 1842. To R. W. Roper, of Charleston, Chairman of the Committee to whom the question of an agricultural survey of the State was referred, the success of the measure is mainly to be ascribed.

[To be continued in next number.]

* In 1805, nearly all the materials now used as manure, were then employed on the Sea-Islands, though in a very limited way.

† That on which the tall marsh grows is greatly to be preferred to all other kinds.

‡ See Note C. in the Appendix for the analysis of K.

NATIONAL INSTITUTE.

LETTER FROM DR. JOSEPH JOHNSON, OF CHARLESTON, (S. C.) ON THE SILK PLANT, &c.

WASHINGTON, (D. C.) Oct. 4th, 1845.

FRANCIS MARKOE, Jr. Esq.

Cor. Sec'y of the National Institute, Washington :

Dear Sir—I read with much pleasure, in Mr. Skinner's July number of the Agricultural Journal, a Letter from D. Smith McCauley to you, from the Consulate at Tripoli, relative to the Vegetable Silk cultivated in that country; of which he also sent the seed and a drawing of the plant. I have now the pleasure of presenting a specimen of the plant, with its flowers and fruit, produced by cultivation on the Agricultural Farm near Charleston, S. C.

In March, 1844, I received a letter from Rev. J. B. Adger, Missionary in Smyrna, Asia Minor, from the Presbyterian Church in the U. States; and with it were various seeds, which I distributed among gentlemen most likely to take an interest in their propagation. Among them were the seeds of this plant, marked "Asclepias:" but, if I remember rightly, not designating the species. No mention was made of its uses or value. Some of the seeds I placed in the hands of Mr. Joseph O'Hear, Superintendent of the Agricultural Farm, and requested his care and attention to them. When your letter appeared in print, Mr. O'Hear not only had the plant itself in flower, but on it were some cocoons, or seed-pods, perfectly matured. He called on me with them, and said that the plant did not flower the year before, but that the stem and root had survived the winter, in an open exposure, and commenced bearing early in the summer; that he had lost the paper with its name, and could not have identified it but for the excellent drawing of the plant in Skinner's Journal. The paper with the name had been staked in the row, when he sowed the seed, to designate it, and was lost in the exposure to the weather. He told me, also, that eight or ten additional stems had sprung up from the roots, most of which had matured their fruit, or pods. When I saw the plants, the season was late and the flowering over; but I obtained a few flowers, with the other important parts of the plant, which I now enclose for the examination of yourself and friends.

When first matured and fresh, these follicles, or pods, resembled the cocoons of silk-worms as much as a vegetable substance may be expected to resemble an animal production. The plants being too much crowded, Mr. O'Hear in-

tends transplanting the stems, and placing them about eight feet apart; the seeds he will distribute among the members of the Agricultural Society.

I have no doubt that the plant has been described and named by European botanists, but I have not met with any satisfactory description of it. It certainly is not among the numerous species found in the United States. As it may interest others, I give the best botanical description that I could obtain; which, conjoined with Mr. Skinner's plate, will give a pretty correct idea of the plant. It is a species of Swallow-wort, one of which is well known as the Trimket plant. In "Turton's Linnæus," it is classed *Pentandria Digynia*; and, we think, comes nearest to his *Asclepias Lunaria* of any other. The stem is simple, round, naked, and about 5 feet high. The leaves linear, channeled, in pairs, and crowded near the top. The flowers in small umbels, axillary, on long peduncles, yellow, nodding, petals very small, the horn not above the crown. The follicles ovate, a little pointed, ventose, thin, white, and spinous. The seeds numerous, black, oblong, and enveloped in a white silky wool, somewhat stronger in its fibre than the shining floss of other species.

Mr. Adger also sent us the seeds of a most delightful species of muskmelon, called the Cassaba melon, from a district in which it is chiefly cultivated and sent to the Smyrna market.—Cassaba is at the western extremity of Asia Minor, about midway between Constantinople and Smyrna, not far from the site of Ancient Troy. I have seen these melons highly commended by English tourists of taste, thereby confirming Mr. Adger's preference; in Charleston they were decidedly preferred in flavor to all others. The melons, from which the seeds were taken which I now send you, were the produce of Dr. Thomas Legare's plantation, on James's Island, near Charleston, and carefully cultivated by him. They succeed best on a good garden mould, damp but not wet, and containing a little lime. They should not be located near other melons, gourds, cucumbers, &c.—which may impair the flavor, and vitiate the seed for a future crop.

I remain, very respectfully,

Your obedient servant,

JOS. JOHNSON.

SOME THOUGHTS ON TRANSPLANTING TREES.

THERE are few operations in American Husbandry, in which so much want of reflection, not to say gross and wilful neglect, is displayed, as in the *transplantation of trees*—whether for fruit or for ornament. It must, however, be admitted, that in this as in all other branches of rural industry, much improvement has taken place within a quarter of a century, since agriculturists commenced to *read* and to *reason* on the *principles* that are involved and brought into action in the practice of every branch of their business, as well as in the business of ship-building, or navigation, or of manufacturing iron or leather. The former practice was (to what a lamentable extent it still continues!) to dig a hole for a young and tender tree, as for a gate-post, just large enough to jam it down, often times doubling up the roots, throw back the dirt to fill up the hole, ramming it with a small rammer, or the handle of the spade, or the eye of a hoe, and there leave this tender creature, without more care or attention, to take care of itself. Let every reader ask himself whether there is much, if any, exaggeration in this statement of the general management of young orchards within his remembrance! Is it any wonder, therefore, that disappointment and mortification should ensue—any wonder that if the tree lives at all, its growth should be stunted, its existence sickly and unfruitful, and its death premature? Why, does any man believe that it ever was intended that such management, if it be not an abuse of terms to call it management, should be crowned with success? We might as well suppose that it was ordained that man should lie on his back and have nothing to do but to open his mouth, and the manna of Heaven which “suits every man’s palate,” would drop into his lazy throat! No, no! man was commanded, not only to replenish the earth, but to “subdue” it.—“In the sweat of thy face shalt thou eat bread,” and for our part we have some difficulty in understanding in what sense the necessity for labor should be deemed a curse. “I have already enjoyed too much; give me something to desire,” said the Prince of Abyssinia, on being asked if he wanted nothing, how he could be unhappy?

In transplanting a tree, instead of restricting our thoughts merely to its present existence and wants, it is proper that we should consider what is necessary to its *growth and prosperity*, and remember, that it will require nursing

and care, such as we would bestow on a young colt—*food* to sustain life and promote growth, and scrubbing and vermifugent medicines to save it from the ravages of parasitic moss, and the internal and external attacks of worms and other insects; and he who is not prepared to provide the food, and to bestow the care here prescribed, to feed and defend it at the root, and to drive off its more open enemies, had better sit down in his sleepy arm-chair, hug indolence to his bosom, and be content to submit to the privations and disgrace that are the just portion of men too ignorant, or too lazy, to perform the duties that belong to their employment and condition in life.

Let him who transplants a tree (and the management of a single one will apply to a whole orchard) ask himself how and where it is to get the elements of its growth? Is it from the air? No! for in that case there would be some chance for its living, when planted in the way we have described; but the support is to come through the roots from the ground. Is it not, then, obvious that we should take care of two things?

1st. That the ground contains the suitable food, and

2d. That it be pulverized and made *easily* accessible to the roots, as far as they would be inclined to go, and that inclination bears a certain proportion to the greatest size that the tree would attain under the most favorable circumstances. Suppose the young tree to be planted, as used to happen, and still does in many cases, in a small hole, in hard, poor land, and then *reverse all these conditions*, as much as possible, and the work will be done in the way that common sense will teach every man it should be done; and that a regard for his own profit and reputation will lead him to do. In other words, let the whole orchard, if it be an orchard, be well manured, then let the *whole field*, not a particular round or square hole just sufficient to admit the roots, but the whole field, be deeply plowed, (if trench-plowed, so much the better,) and well pulverized, and so far, and not short of that, the Farmer will have, *up to that point*, done his duty. If the hole be made much smaller than the space which would be ultimately penetrated by the roots, provided they had their way, in well-manured ground, when the roots have extended to the circumferent limits of the hole dug for its reception, then will its growth receive a sudden check,

just as would the growth of a fat colt if suddenly put on short allowance, or a calf which had sucked from the whole udder, when restricted to one teat; and the farmer, good, easy man, wonders how his orchard should stop growing! Starvation generates disease, just as vermin are bred in the filth and rags of the lazar. So arborical poverty and sickness will contract moss which at once consumes the substance of the tree, and offers a ready shelter for the thousands of insects on the look-out for exactly such places to deposit their eggs, the young of which, when hatched, again find their natural food in the fruit. A tree, like everything else in nature, when it comes into existence, should be supplied with food and *kept growing*, if you wish it to attain its full natural growth and fruitfulness. The truth of this is illustrated in a thousand ways, for Nature is prodigal in her offers of instruction, if man, whose natural and sluggish tendency is to repose, would only keep his eyes open. What science does she not illustrate? For one instance, suppose a stalk of corn, under favorable circumstances, to reach great size, and to have ears that commence with a large number of rows, promising a prodigious yield; yet if there comes a severe drouth, the ground bakes, the roots are checked, and the air and the earth both become dry, and you will find that the ear of corn which had started with, we will say, 12 rows will contract to ten, and if these distressing circumstances of earth and atmosphere continue, finding that it cannot carry out its second undertaking, it will contract the number of rows again to eight; but, strange to say, it will always preserve an *even* number. All this we remember to have seen exemplified in corn exhibited at Wilmington, Delaware. Some have contended for proof of *intelligence* or *volition* in the roots of a plant from its selecting food adapted to its growth, and the rejection of that which would be deleterious. This alteration more than once of the design of the corn, to produce a certain number of rows, and its invariable adherence, under all circumstances, to an *even number*, looks yet more like volition or instinct. But let us admire the mysteries that we cannot penetrate and explain. Providence never designed that we should know everything at once, but wisely stimulates inquiry by the lively hope and ambition of new discoveries. In the midst of the deserts of Africa, when on the eve of perishing, the ill-fated MUNGO PARK shook off the despair under which he says he was fast sinking unto death, by seeing in the midst of that desert a delicate spear of moss, at which he said if even that was not beneath the care of Providence, why might he not yet hope to be saved? But to return to our subject. If plants of corn require a certain distance within which to grow, and to have the

intervening space manured and pulverized, why should not *trees* require the same advantages in *proportion* to their size. True, the tree demands not, neither does it get the frequent stirring of the land which is indispensable to corn while growing, because its roots are stronger and its natural life is longer; but the tree does require the land to be well manured and well broken, at least when it is planted; and it is only when the planter is prepared to offer it that indispensable guarantee of life, growth, and fruitfulness, that he ought to take its life and managery into his keeping. If he cannot thus care for 100, let him plant 50, and if not 50, let him plant 10. Let him, in a word, in this case and all others, embark in nothing which he does not *mean to do well*, and, thank God and the progress of light and knowledge, the time is coming when the ignorant and slovenly farmer will lose caste and character as surely and as much as the pettifogger is condemned at the bar, among learned counselors, and the demagogue despised in executive offices and the halls of legislation, by true patriots and statesmen.

All this have we written without intending to do more than barely say a word in recommendation and support of the following essay, which we find in the September number of the English Farmers' Magazine. The reader will think that the comment has anticipated, without so well expressing the meaning of the text. Better than either, however, will he find the extract from Mr. DOWNING's valuable book on 'The Fruit and Fruit Trees of America,' to which it did not occur to us to revert, until we had written to the end of the preceding paragraph. We hope he will excuse us for offering to the reader a draft, which, large as it is, will only stimulate his thirst for more, and prompt him to take, at the original fountain, the book itself, from which we have drawn the chapters which follow the English Essay, for his instruction.

PREPARATIONS FOR PLANTING.

As the season approaches when trees of all kinds may be planted with every prospect of success, under circumstances most favorable to their success, it has been judged fitting to make some allusion to the preparation of land in general, referring to a future opportunity any notice of the soil peculiarly suitable to each.

Trees, agriculturally considered, are great enemies to the crops of the farm; and, as such, many writers of the day have successfully labored to show that, however ornamental they may be in themselves, and to the landscape of the country, their existence, in hedge-rows above all, is an evil, unless it be in exposed situations, where they may act as screens of defence against the violence of prevailing winds.

There are two or three writers of recent date whose works will be referred to, and recommended as guides to readers interested in the culture of ornamental and timber trees. These writers are Mr. Withers, of Holt, Norfolk, who

has written *con amore* upon this, his favorite topic; and Mr. Stephens, of Edinburgh, author of "*The Book of the Farm*," a work which ought to be in the hands of every agriculturist of the new school who is emulous to meet the emergency of the times by the relinquishment of ancient prejudices, and the adoption of new and improved modes of culture.

They who have candidly perused "*The Woodlands*" of the late William Cobbett, must acknowledge that his directions, whether in all cases correct or not, are precise, and intelligible to all. Its style is clear, its rules simple and perspicuous; and, as the author really begins at the beginning, any one who is desirous to do the work of planting effectually, may confide at least in the rules which are there laid down for the preparation of the land, because there is no mystification in them.

It is certain that the beauty of English scenery is mainly dependent upon the multitude of its hedges and hedge-row trees; but, as was proved by a late writer on the Agriculture of Devonshire, the country suffers severely by these ornaments; utility and productiveness are thus sacrificed; and, therefore, as we would have things put in their right places, we at once urge the abandonment of all those harbors of vermin, which cause the waste and deterioration of agricultural grain crops, in more ways than one, without any redeeming qualification, inasmuch as the timber and underwood about a farm are, in themselves, of no remunerative value whatever.

But timber is a source of wealth: trees are glorious objects; and plantations adorn a country: therefore we would place them in appropriate situations, and grow them when there to perfection; but, to do so, the preparation of the land is a consideration of first-rate importance.

Trees ought, in fact, to be grown in woods; also, as screens or belts for protections; and in groups, or positions, where, placed singly, they may constitute a prominent and striking feature of park scenery. The late Rev. William Gilpin, in that interesting book, "*The Forest Scenery*," has afforded many striking examples of the effects of grouping, chiefly with a view to *picturesque beauty*; and we recommend the perusal of it to every one interested in the art of planting, for that express object.

But beauty cannot consist with stunted deformity; therefore we must, in the first place, study the soil and its effectual preparation; and upon these points our best writers are perfectly agreed.

Cobbett insists chiefly upon the thorough trenching of the land to the depth of at least two feet, reversing the surfaces if the soil be good to that extent; but he justly qualifies this position by observing that the soil may be such, in respect to its subsoil, "as to bring to the top something in which hardly anything will ever strike root—as, for instance, clear chalk, or pure sand, or gravel, or clay." When this is the case, the top mould must be kept at top; "but still the trenching is always to be performed, for the ground must be moved and turned to the depth of two feet." Mr. Withers is not content with trenching or deep plowing; he adds manure to the amount of twenty loads per acre, and says that, "when you manure, you never want to fill up, for all the trees are sure to take, and instead of filling up, you may, after the third year, take out and transplant at least a tenth part of them." (*Memoirs*, 1827.)

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Mr. Withers's "Letter to Sir Henry Steuart, Bart., on the Improvement in the Quality of Timber"—1829—is a very valuable treatise, and worthy of being better known.

It is, perhaps, needless to revive the subject of a controversy which once was carried on most strenuously between the advocates of effectual preparation of land by deep trenching, and others who were content to open holes in the ground for each individual tree. "The cheap, hole-digging, short-sighted Scotch system," as it was called some twenty years ago, was "calculated to bring upon those who adopted it only loss and disappointment," that in this day of philosophical inquiry and chemical research, we have little cause to make farther allusion to that which experience must have disqualified. But it cannot be wrong or invidious to inquire into the causes by which deep comminution of soil will contribute to the permanent advantage of every species of vegetation.

Without farther entering into the mechanical processes of trenching, already described in the first part of the articles upon "*Orchards*," it will be relevant to insist upon the agency of those chemical constituents of soil—loams especially—which never entered into the calculation of the earlier writers. Our forefathers knew nothing of analysis; they had no idea of the existence of the phosphates, silicates, and alkalies, which modern Chemistry has brought to light. But now we know, and the knowledge is widely diffused—thanks to the enlightened German chemist, Liebig!—that, by the breaking up and the pulverization of earths, a volume of salts—usually termed the *inorganic* constituents of land—is distributed through the staple earth, and afford to timber those salts, the presence of which was deemed inexplicable.

Thus the thousands of tons of pearl and pot-ashes, that have been articles of commerce to an extent almost unlimited, are now understood to be derived from the soil, and distributed only through (not formed or created *in*) appropriate vessels of the vegetable tissue. The laboration of the ground, therefore, is now proved, beyond question or doubt, to be indispensable, not only, as was supposed, to the first advances of young trees, but to their future progress towards perfection.

Trenching is, in no case, labor lost; and even where a single tree only is to be planted, to produce a particular effect, the hole to receive it ought to be prepared upon the principles of trenching—that is, by opening and comminuting the earth to a very considerable extent and depth, so as to insure good drainage, and the free tracings and extension of the roots, laterally, through a number of feet around the bole of the tree.

They who have traveled extensively, and witnessed the wretched progress of young trees that have been planted in holes so small as to require their roots to be, as it were, screwed into the ground, will want no other monitor to impress the great, undeniable truth, that early and effectual preparation is the only guarantee of success. Let any one try the experiment upon a couple of gooseberry bushes, by planting one in a narrow hole, and the other by expanding its roots in a soil worked and made permeable to the extent of a square yard, and the difference of the results will be sufficiently established before the lapse of two entire seasons. The soil shall be the same—a free unctuous loam—and the sites contiguous; yet one tree will be stunt-

ed, while the other shall produce luxuriant and healthful young wood; one will bear early a few starved berries—the other, though not so soon in maturity, will maintain a high state of fertility for, perhaps, fourteen years.

J. TOWERS.

TRANSPLANTING.

As nearly all fruit trees are raised first in nurseries, and then removed to their final position in the orchard or fruit garden; as upon the manner of this removal depends not only their slow or rapid growth, their feebleness or vigor afterwards, and in many cases even their life, it is evident that it is in the highest degree important to understand and practice well this *transplanting*.

The season best adapted for transplanting fruit trees is a matter open to much difference of opinion among horticulturists; a difference founded mainly on experience, but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

All physiologists, however agree that the best season for transplanting deciduous trees is in autumn directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates, and dry soils; and even for very hardy trees, as the apple, in colder latitudes; as the fixed position in the ground, which trees planted then get by the autumnal and early spring rains, gives them an advantage, at the next season of growth, over newly moved trees.

On the other hand, in northern portions of the Union, where the winters commence early, and are severe, spring planting is greatly preferred. There, autumn and winter are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all that slow growth and collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruit trees, the Peach and Apricot, which are less hardy when newly planted than when their roots are entire, and well fixed in the soil, are liable to injury in their branches by the cold. The proper time, in such a climate, is as early as the ground is in a fit condition in the spring.

Early in autumn, and in spring before the buds expand, may as a general rule be considered the best seasons for transplanting. It is true that there are instances of excellent success in planting at all seasons, except midsummer; and there are many who, from having been once or twice successful in transplanting when trees were nearly in leaf, avow that to be the best season; not taking into account, that their success was probably entirely owing to a fortunately damp state of the atmosphere at the time, and abundant rains after the experiment was performed. In the middle States, we are frequently liable to a dry period in early summer, directly following the season of removal, and if transplanting is deferred to a late period in spring, many of the trees will perish from drouth, before their roots become established in

the soil. Spring planting should, therefore, always be performed as soon as possible, that the roots may have the great benefit of the early and abundant rains of that season, and get well started before the heat of summer commences. For the neighborhood of New-York, therefore, the best periods are, from the fall of the leaf, to the middle of November, in autumn; and, from the close of winter, to the middle of April, in the spring; though commonly, the seasons of removal are frequently extended a month beyond these limits.

Taking up the Trees is an important part of the operation. A transplanter should never forget that it is by the delicate and tender points or extremities of the root that trees take up their food; and that the chance of complete success is lessened, by every one of these points that is bruised or destroyed. If we could remove trees with every fibre entire, as we do a plant in a pot, they would scarcely show any sign of their change of position. In most cases, especially in that of trees taken from nurseries, this is, by the operation of removal, nearly impossible. But although we may not hope to get every root entire, we may, with proper care, preserve by far the larger portion of them, and more particularly the small and delicate fibres. After being taken up, they should be planted directly; or, if this cannot be done, they should be kept from drying by a covering of mats, and when sent to a distance by being packed in damp moss.*

Preparing the places. Here is the fatal stumbling-block of all novices and ignorant persons in transplanting. An English gardener, when he is about to plant fruit trees, talks about *preparing his borders*; an American says he will *dig his holes*; and we cannot give a more forcible illustration of the ideas of two persons as the wants of a fruit tree, or a better notion of the comparative provision made to supply these wants, than by contrasting the two phrases themselves. The one looks upon a tree as a living being, whose life is to be rendered long, vigorous, and fruitful by a good supply of food, and a soil mellow and easily penetrated by the smallest fibre; the other considers it very much in the light of a truncheon or a post, which he thrusts into the smallest possible hole, and supplies with the least portion of manure, trusting to what he seems to believe the inextinguishable powers of Nature to make roots and branches under any circumstances. It is true that the terms differ somewhat from the nature of the culture and the greater preparation necessary in planting fruit trees in England, but this is not by any means sufficient to justify the different modes of performing the same operation there and here.

In truth, in this country, where the sun and climate are so favorable, where pruning and training are comparatively so little necessary, the great requisite to success in the ordinary culture of fruit trees is the *proper preparation of the soil* before a tree is planted. Whether a transplanted tree shall struggle several years to recover, or grow moderately after a short time, or at once start into a very luxuriant and vigor-

* We should notice an important exception to this in the case of trees packed for shipping across the Atlantic. In this case they should be packed only in dry moss; the moisture of the sea air being sufficient to keep the roots in good condition, while if packed in damp moss they will be injured by rotting or excessive growth.

ous growth, depends entirely upon the amount of care and labor the planter is willing to bestow on the soil for his trees. We have seen several instances where, side by side, one man planted his trees in large spaces of deeply moved and rich soil, and another in small holes in the common mode, which uniformly showed the trees of the first, larger after five years, than those of the last, after twelve.

No fruit tree should be planted in a hole of less size than three feet square, and eighteen inches to two feet deep. To this size and depth the soil should be removed and well pulverized, and it should if necessary be properly enriched by the application of manure, which must be thoroughly mixed with the whole mass of prepared soil by repeated turnings with the spade. This preparation will answer, but the most skillful cultivators among us make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigor of growth, even in a poor soil, is promoted by this. No after mending of the soil, or top dressings applied to the surface, can, in a climate of dry summers like ours, equal the effects of this early and deep loosening and enriching the soil. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to the planter. This preparation may be made just before the tree is planted, but, in heavy soils, it is much better to do it several months previously; and no shallow plowing of the soil can obviate the necessity and advantages of the practice, where healthy, vigorous orchards or fruit gardens are desired.

The whole art of transplanting, after this, consists in placing the roots as they were before, or in the most favorable position for growth. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade, shape this soil for the roots in the form of a little hillock on which to place the roots—and not, as is commonly done, in the form of a hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots, and cut off all wounded parts, paring the wound smooth. Hold the tree upright on its little mound in the hole of prepared soil; extend the roots and cover them carefully with the remaining pulverized soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollows to cause the decay of the roots, not only must this be secured by patiently filling-in all cavities among the roots, but when the trees are not quite small, it is customary to pour in a pail of water when the roots are nearly all covered with soil. This carries the liquid mould to every hidden part. After the water has settled away, fill up the hole, pressing the earth gently about the tree with the foot, but avoiding the common practice of shaking it up and down by the stem. In windy situations it will be necessary to place a stake by the side of each tree to hold it upright, until it shall have taken firm root in the soil, but it is not needful in ordinary cases.

Avoid deep planting. More than half the losses in orchard planting in America arises from this cause, and the equally common one of crowding the earth too tightly about the roots. No tree should be planted deeper than it formerly grew, as its roots are stifled from the

want of air, or starved by the poverty of the soil at the depth where they are placed. It is much the better and more natural process in fact to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or three inches higher than the level of the ground about. This, when the mound settles, will leave it nearly on the level with the previous surface.

Mulching is an excellent practice with transplanted trees, and more especially for those which are removed late in the spring. Mulching is nothing more than covering the ground about the stems with coarse straw, or litter from the barn-yard, which by preventing the evaporation keeps the soil from becoming dry, and maintains it in that moist and equable condition of temperature most favorable to the growth of young roots. Very many trees, in a dry season, fail at midsummer, after having made a fine start, from a parched and variable condition of the earth about the roots. Watering, frequently fails to save such trees, but mulching when they are planted will entirely obviate the necessity of watering in dry seasons, and promote growth under any circumstances. Indeed, watering upon the surface, as commonly performed, is a most injurious practice, as the roots stimulated at one period of the day by water, are only rendered more susceptible to the action of the hot sun at another, and the surface of the ground becomes so hard, by repeated watering, that the beneficial access of the air is almost cut off. If trees are well watered in the holes, while transplanting is going on, they will rarely need it again, and we may say *never*, if they are well mulched directly after planting.

The best manure to be used in preparing the soil for transplanting trees is a compost formed of two-thirds muck or black peat earth, reduced by fermenting it several months in a heap with one third fresh barn-yard manure. Almost every farm will supply this, and it is more permanent in its effects, and less drying in its nature, than the common manure of the stable. An admirable manure, recently applied with great success, is charcoal—the small broken bits and refuse of the charcoal pits—mixed intimately with the soil. Air-slaked lime is an excellent manure for fruit trees in soils that are not naturally calcareous. Two or three handfuls may be mixed with the soil when preparing each space for planting, and a top dressing may be applied with advantage occasionally afterwards, to increase their productiveness. But, wherever large orchards or fruit gardens are to be planted, the muck compost heap should be made ready beforehand, as it is the cheapest, most valuable, and durable of all manures for fruit trees.

Pruning the heads of transplanted trees, at the season of removal, we think generally an injurious practice. It is certainly needless and hurtful in the case of small trees, or those of such a size as will allow the roots to be taken up nearly entire; for, as the action of the branches and the roots is precisely reciprocal, and as new roots are rapidly formed just in proportion to the healthy action of the leaves, it follows that by needlessly cutting off branches we lessen the vital action of the whole tree. At the same time, where trees are transplanted of so large a size that some of the roots are lost in removing them, it is necessary to cut back or shorten a few of the branches—as many as will restore the balance of the system—otherwise the

perspiration of the leaves may be so great, as to exhaust the supply of sap faster than the roots can collect it. A little judgment only is necessary, to see at a glance, how much of the top must be pruned away before planting the tree, to equalize the loss between the branches and the roots.

When it is necessary to transplant fruit trees of large size, the best practice is to prepare them previously by digging a trench round the whole mass of roots, undermining them, and cutting off all roots projecting beyond this line. The trench should be dug at such a distance from the tree as will include all the large and sufficient ball of roots, and it should be done in the spring, or before midsummer, when it is desirable to remove the tree the next year. After all the roots that extend to this circular trench are cut off, the earth is replaced, and by the season following an abundance of small fibres is sent out by the amputated roots, which, when the whole is now removed, will insure the success and speedy growth of the tree. This is more completely the case when the tree is prepared two years before transplanting. A variation of this mode, which has been found quite as successful and less laborious, consists in leaving the trench open, and covering it with boards only, or boards with a top layer of turf. The tree then is somewhat checked in its growth, it throws out an abundance of small fibres into the ball of earth containing the roots, and is the next season transplanted with great ease and safety.

The proper size for transplanting varies somewhat with the sort of tree, and the kind of culture intended. It is, however, a maxim equally well settled, both among theorists and the best practical men, that health, immediate vigor, and duration, are all greatly promoted by transplanting fruit trees of small size—from three to six or seven feet. We are fully aware with what impatience the beginner, or a person who knows little of the culture of trees, looks upon trees of this size—one who is eager to plant an orchard, and stock a garden with large trees, thinking to *gather a crop next year*. The latter may indeed be done, but the transplanting so affects the tree, that its first scanty crop is followed by a long season of rest, and feeble growth, while the plantation of young trees is making wood rapidly, and soon comes into a healthy and long-continued state of productiveness—often long, indeed, before the large trees have fairly arrived at that condition. The small tree, transplanted with its system of roots and branches entire, suffers little or no check; the older and larger tree, losing part of its roots, requires several years to resume its former vigor. The constitution of the small tree is healthy and unimpaired; that of the large is frequently much enfeebled. A stout and vigorous habit—what the nurserymen call a *good stocky plant*—is the true criterion of merit in selecting fruit trees for transplanting.

Trees intended for orchards, being often more exposed than those in gardens, should be somewhat larger—not less than six, or more than eight feet is the best size. For gardens, all experienced cultivators agree that a smaller size is preferable; we prefer plants two years old from the graft. Most gardeners abroad, when they select trees with more than usual care, take what are called maiden plants—those one year old from the graft, and there can be no doubt that, taking into account health, duration, and the ease with which such a tree can be made to

grow into any form, this is truly the preferable size for removal into a fruit garden. But we are an impatient people, and it is not till another after century of trial and experience in the culture of fruit trees, that cultivators generally in this country will become aware of the truth of this fact.

The facility with which the different fruit trees may be transplanted differs considerably. Plums are generally removed with most success and after them nearly in the order as follows:—Quinces, Apples, Pears, Peaches, Nectarines, Apricots, and Cherries; the latter succeeding with some difficulty when of large size.

Laying-in by the heels is a practice adopted as a temporary kind of planting, when a larger quantity of trees is at hand than can be set out immediately. A trench is opened, and the roots are laid in and covered with soil, the tops being previously placed in a sloping position, inclining to within a few feet of the surface. In this way they are kept fresh and in good order, until it is convenient to plant them finally. In northern districts, where the autumn is often too severe for planting, and the spring is frequently too late to receive trees in time from nurseries farther south, it is a common and successful mode to procure trees in autumn and lay them in by the heels until spring, covering over the tops of the more tender sorts if necessary with coarse litter.

In planting an orchard, always avoid placing the trees in the same spot or near where an old tree stood before. Experience has taught us that the growth of a young tree, in such a position, is weak and feeble; the nourishment suitable to that kind of tree having already been exhausted by a previous growth, and the soil being half filled with old and decayed roots which are detrimental to the health of the young tree.

THE POSITION OF FRUIT TREES. SOIL AND ASPECT.

In our favorable climate many fruit trees will thrive and produce some fruit in almost any soil, except dry sand, or wet swamps. But there is much to be gained in all climates by a judicious selection of soil, when this is in our power, or by that improvement which may generally be effected in inferior soils where we are necessarily limited to such. As we shall, in treating the culture of each genus of fruit, state more in detail the soils especially adapted to its growth, our remarks here will be confined to the subject of soils generally, for the orchard and fruit garden. The soils usually selected for making plantations of fruit trees may be divided into light sandy loams, gravelly loams, strong loams, and clayey loams; the first having a large proportion of sand, and the last a large proportion of clay.

The soil most inviting to the eye is a *light sandy loam*, and, as it is also a very common soil, more than half the fruit gardens in the country are composed of this mould. The easy manner in which it is worked, owing to its loose and very friable nature, and the rapidity with which, from its warmth, crops of all kinds come into bearing, cause it to be looked upon with almost universal favor. Notwithstanding this, a pretty careful observation, for several years, has convinced us that a light sandy soil is on the whole, the worst soil for fruit trees. Under the bright skies of July and August, a fruit tree requires a soil which will retain and afford a mod-

erate and continued supply of moisture, and here the sandy soil fails. In consequence of this the vigor of the tree is checked, and it becomes feeble in its growth, and is comparatively short-lived, or unproductive. As a tree in a feeble state is always most liable to the attacks of insects, those on a sandy soil are the first to fall a prey to numerous maladies.* The open loose texture of a sandy soil, joined to its warmth, affords an easy passage, and an excellent habitation for all insects that pass part of their lives in the ground, preparatory to rising out of it to attack the fruit, foliage, or branches of the tree.

Such are some of the disadvantages of a light sandy soil; and, in thoroughly examining many of the fruit gardens of the middle States the last few seasons, we could not fail to be struck with the fact that in nine cases out of ten, where a variety of fruit was unusually liable to disease, to blight, or to the attacks of certain fruit-destroying insects, as the curculio, the trees themselves were on sandy soils; while on the other hand, and frequently in the same neighborhood, the same sorts were growing luxuriantly and bearing abundant crops, where the soil was a rather strong loam.† For a few years, the growth and productiveness of the trees upon sandy soil, is all that can be desired; but the trees are shorter lived and sooner fall into decay than where the soil is stronger. If there is any exception to this rule, it is only in the case of the Peach, and judging from the superior flavor of this fruit on stronger soils, we are inclined to doubt the value of the exception even here.

Gravelly loams are frequently much better adapted for orchards than sandy, especially where the loam is of a strong quality, and the gravel is not in excess; and the hardier fruits usually do well on this kind of soil.

Strong loams, by which we mean a loam with only just a sufficient portion of sand to make it easily worked, are on the whole by far the best for fruit gardens in this country. A strong loam is usually a deep soil, and affords during the whole heat of summer, a proper supply of moisture and nourishment to the roots of trees. Fruit trees do not come into a bearing state so soon in a strong as in a sandy loam, because the growth of wood is more vigorous, and fruit buds are not so soon formed; but they bear larger crops, are much less liable to many diseases, and their longevity is much greater. The largest and most productive orchards of the Apple and Pear in this country are upon soils of this kind.

Clayey loams are, when well drained, and when the clay is not in excess, good fruit soils; they are usually strong and deep soils though rather heavy and difficult to work. Trees that will flourish on these soils, such as the Apple, Pear, Cherry, Plum, and Apricot, usually are very free from disease, or insects, and bear large

crops. In a moist climate, like that of England, fruit trees on a clayey loam would die of canker, brought on by the excessive quantity of water contained in the soil, but such is not the case under the high and warm temperature of our summers. The finest, largest, and most productive Plums and Pears within our knowledge, grow in sites on the North river, when the soil is a stiff clayey loam, almost approaching a clay. Those fruits that on light sandy soils are almost worthless from their liability to disease, and the attacks of insects, are here surprisingly luxuriant and fruitful.

It is, however, well to remark, that some varieties of fruit, perhaps from the circumstances of their origin, succeed better on sandy soils than any other; thus the Newtown pippin will only arrive at perfection in a strong loam, while the yellow bell flower is finer when grown on a sandy soil. But these are exceptions to all rules, and what we have already stated, as to the relative quality of soils, will apply pretty generally to the whole of this country south of the Mohawk river; and it may be added that calcareous soils, of whatever texture, are better than soils of the same quality where no limestone is present.

Trenching is the most complete method of improving a soil too sandy, when the subsoil below is of a loamy or clayey nature. Deep subsoil plowing, by bringing up a sufficient quantity of the stratum below, will answer the same purpose. When the subsoil of a sandy soil is sand or gravel, the surface can only be improved by top-dressings, or the application of manures. Top-dressing with clay is the most simple means of changing the nature of such a soil, and it is surprising how moderate a quantity of clay will give a closer texture to light sandy soils. In manuring such soils, we may greatly improve their nature as well as condition, by using composts of peat or bog-earth, swamp muck, or river mud, instead of common barn-yard or stable manure. The former are not only more permanent and better as manures for fruit trees, but they gradually consolidate and improve the whole texture of the soil.

Indeed, no fruit garden, where the soil is not naturally deep and rich, is in perfect condition for planting trees, unless the soil has been well trenched two spades in depth. This creates a matrix for the roots, so deep and permanent that they retain their vigor and luxuriance through the drouths of summer and continue for a long time in a state of health and productiveness.

It is difficult to give any precise rules as to aspect. We have seen fine fruit gardens here in all aspects. Perhaps the very best aspect, on the whole is a gentle slope to the southwest, because in such positions the trees, when in blossom, are somewhat protected from the bad effects of a morning sun after spring frosts. But, to remedy that more perfectly, it is sometimes the practice to plant on the north sides of hills, and this is an effectual way where early frosts are fatal, and where the season is long and warm enough to ripen the fruit in any exposure. A due south slope is, south of New-York, frequently found too warm for many fruit trees, in soils that are light and dry.

Deep valleys, with small streams of water, are the worst situations for fruit trees, as the cold air settles down in these valleys in a calm frosty night, and buds and blossoms are very frequently destroyed. We know a rich and fertile valley

* This remark applies to the middle and southern portions of this country. North of the 43d degree, a light sandy soil is perhaps preferable as warmer and earlier.

† As an instance in point, the owner of one of the most highly cultivated gardens in the vicinity of Boston was showing us, in despair, some trees of the Seckel pear upon which he could no longer get good crops, or fair fruit, and lamenting the degeneracy of the sort. The next day we saw in a neighboring garden beautiful crops of this pear growing with the least possible care. The garden in the first case was a sandy loam; in the second, a strong loam.

of this kind in Connecticut where the Cherry will scarcely grow, and a crop of the Apple or the Pear is not obtained once in ten years; while the adjacent hill-tops and high country, a couple or three miles distant, yield abundant crops annually. On the other hand, the borders of large rivers, as the Hudson, or of some of our large inland lakes, are the most favorable situations for fruit trees, as the climate is rendered milder by large bodies of water. In the garden where we write, a fourth of a mile from the Hudson, we have frequently seen ice formed during the night, of the thickness of a dollar, when the blossoms of the Apricot were fully expanded, without doing the least harm to that

tender fruit. This is owing to the slight fog rising from the river in the morning, which, softening the rays of the sun, and dissolving gradually the frost, prevents the injurious effects of sudden thawing. At the same time, a couple of miles from the shores, this fruit will often be quite destroyed. In short, the season on the lower half of the Hudson, may, from the ameliorating influence of the river, be said to be a month longer—a fortnight earlier in spring, and later in autumn, than in the same latitude a few miles distant; and crops of the more tender fruits are, therefore, much more certain on the banks of large rivers or lakes, than in inland districts of the same climate.

AGRICULTURAL DISCOURSE,

DELIVERED BEFORE THE QUEENS COUNTY AGRICULTURAL SOCIETY, AT HEMPSTEAD, L. I.

OCTOBER 9th, 1845.

In compliance with the following invitation, we delivered, on the 9th of October last, the succeeding Address:

JERICHO, QUEENS CO., SEPT. 9, 1845.

HON. J. S. SKINNER:

My Dear Sir—At a meeting of the Board of Managers of the Queens County Agricultural Society, held this day, a Committee was appointed to select a proper person to deliver the Address at their Fair and Cattle Show, to be held at Hempstead, on the 9th of October next.

The Committee have unanimously instructed me to invite you to be the Orator on that occasion; and, in discharging this agreeable duty, I can but express the hope that you may find it agreeable to gratify our desires.

With much respect,

I am, dear sir, your ob't serv't,

ALBERT G. CARLL,

Chairman, &c.

The following note and resolution explains its appearance in the pages of the "Farmers' Library:—"

JERICHO, OCT. 9, 1845.

To the Hon. J. S. SKINNER:

My Dear Sir—Immediately after the delivery of your Address, this day, before the Queens County Agricultural Society, the following Resolution was adopted:

"Resolved, unanimously, That we tender to our most esteemed friend, Mr. SKINNER, our hearty and sincere thanks for the beautiful and interesting Address he has just delivered before us; and we beg he will furnish a copy for publication in the 'Farmers' Library,' and in pamphlet form."

Allow me to express the hope that you may find it agreeable to comply with this request of the yeomanry of our County, whose admiration for the Address is only equaled by their esteem and respect for its

Author—in whom they recognize one of the earliest advocates for the improvement of American Husbandry.

I am, with great respect, my dear sir,

Very truly, your obedient servant,

ALBERT G. CARLL,

Corresponding Sec'y.

LADIES AND GENTLEMEN—MEMBERS OF THE
QUEENS COUNTY AGRICULTURAL SOCIETY:

THE natural conjecture, how it is that, being almost a 'stranger within your gates,' I should have been thus complimented with an appointment to address you on an occasion of so much interest to you all, can only be solved by the supposition that some report of my humble labors, in other forms, may have led you to invite for your Advocate to-day one who, however otherwise inadequate, may yet venture to plead the merit of sincere devotion to your cause. Not that sudden and transient zeal, which ignites like powder, and explodes as soon—burning only at festivals and holidays—but that early-imbibed and enduring inspiration, which, falling from the lips of a parent, himself, by inheritance and by choice, a practical farmer, fell on the heart of the son—grew with his growth, and strengthened as maturing judgment qualified him to compare the various pursuits of life, and to note their bearing, respectively, on the welfare of society.

Going in early life to reside in a populous city, and casting about for occupation of those leisure hours which are always full of danger, it seemed to me, as does it not to you? to be passing strange that, with so many papers to enlighten and push forward all other pursuits, there should, until then, never have been one in

vindication of the rights and interests of American Agriculture!

While Law, Medicine, Mechanics, Commerce, and other trades and sciences, had their presses to proclaim their discoveries—to cultivate their peculiar literature—to assert their usefulness—to challenge the public confidence, and to exert their control over public opinion and the legislation of the country—not an organ was sounded to instigate improvements in American Husbandry, and assert the preponderating claims of the great producing class to public consideration, and to a proportionate share in all exercises of power calculated to affect the welfare of the Republic!—no! not a solitary press, that the American husbandman could call his own, until the humble individual who now addresses you, though occupied through the day in the discharge of an important public trust, determined, hit or miss, to make the experiment, and to see whether the agricultural community might not be brought to indicate a consciousness that they, too, had an interest to be exemplified, acknowledged and sustained; as the one in which reside, after all, and above all, the sinews of national power and the fountain of all national prosperity—an experiment to see whether they would be content to be for ever regarded as mere “hewers of wood and drawers of water” for subordinate and parasitical classes, or whether they would not rise in a spirit worthy of independent tillers of the soil, and let the country understand that they, too, had an occupation of surpassing usefulness; ay, and as susceptible as any other of taking the polish of Literature, of exemplifying the principles of Philosophy, of clothing the naked and of feeding the hungry, and, above all others, entitled to engage the care and to exercise its proportionate share of the power of Government!

Such, my friends, was the origin—such has been the constancy—of my zeal in the cause of the Plow; and thus it may have been that my humble name has reached you, and will account for what might otherwise appear as strange to you as it was altogether unexpected to me. But, if there be in this assembly any who have come in expectation of having their imaginations warmed, as by my learned predecessors, with glowing eulogies on Agriculture, and splendid narratives of how,

“In ancient times, the sacred plow employed
The kings and awful fathers of mankind,”

all such will have too much reason to regret that your choice has fallen on one who, in all his efforts to promote our common object, has aimed no higher than to suggest what seemed useful in a plain, practical way. But though my hope has been to promote improvements in the practice, by an early and wide dissemination of all improvements in the art of Agriculture,

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that has not been my *only*—I had well-nigh said, my principal aim. No, my friends! it has been my ambition, vain though it may have proved, to assist in awakening American farmers to a sense of the obligation they are under to themselves and their children, to their calling and their country, to have the rising generation instructed in the different sciences and the various literature that belong to their own, as an intellectual and liberal pursuit, instead of being regarded as a mere mechanical, imitative drudgery, with which the mind had no concern.

Yes, gentlemen, measures should be taken to have taught in our schools, combined with some *practice* of Agriculture and Horticulture, the outlines at least, of Geology and Chemistry, that something may be known of the constituent parts and elements of soils and plants, and in the selection of manures with reference to both.

For the many years that I have written, *con amore*, on your pursuit, I have endeavored to spread my own persuasion, that every parent whose son is destined for the plow, should be careful to have him taught at school, and if possible, too, at his own fireside, the natural, botanical, commercial, and economical history and uses, and the medical and other properties of every tree, plant, fruit, grain, vegetable, insect, fowl or animal, that he raises or cultivates or catches or kills—from what country they came—what is their congenial climate, or to what one they may be transplanted and reconciled—how far they have been, or may be made subjects of commerce, or materials of manufactures—whether in the case of plants, they are valuable as food for or are designed only to clothe man or beast—whether though medicinal, they may not yet be poisonous, as most medicinal plants are; and, therefore, to be cautiously used, not extirpated. A slight knowledge of botany, for example, would instruct him that our invaluable potato, the boast of our continent, is a prominent representative of an order of vegetables, many of which are as deadly poisonous as the potato is, itself, eminently nutritive and wholesome. Among the members of this family, he would learn to recognize the deadly nightshade, and the bitter sweet, of which there are beautiful specimens covering summer arbors in the gardens of Saratoga.—So are of the same family, tobacco, and the dangerous *Stramonium* or Jamestown weed, which I have seen growing in such luxuriance near this town. A knowledge of its poisonous qualities would within my own observation have saved the bitter anguish of two parents whom I once met on the road in my native county, following two lovely boys, brothers, on their way to a common grave, there, as in life, to sleep in each other's arms, but now to sleep forever in their “narrow home.” In their

ignorance and childish curiosity they had eaten of the berries of the Jamestown weed.

Entomology, too, or the study of insects, opens a wide field for amusing research, and is naturally allied to Agriculture, and inseparable from rural life and observation, as I have noted and argued in a chapter in the Farmers' Library, devoted to this subject. We are told that the skill of the great naturalist Linnæus, by the most simple observation, taught his countrymen how to destroy an insect—the *cantharis naavalis*—which had cost the Swedish government many thousand pounds a year by its ravages in one ship-yard alone. After its metamorphoses, and the season when the fly laid its eggs were known, all its ravages were stopped by immersing the timber in water during that period. While the provident housewife industriously destroys the vermin that infest her closets and her dormitories, her less persevering spouse, in indolent despair, permits the residue of that immense family, undisturbed, to feed on his crops, and then patiently re-plants to supply them with a fresh banquet.

When I recommend elementary instruction in these subjects, so closely allied to practical Agriculture, and familiarity with which, it must be admitted, is so befitting every country gentleman, let it be borne in mind that nothing is more remarkable in this age of progress than the improvements which have been devised to facilitate the acquirement of knowledge in all the natural sciences. To that end illustrations are employed, and terms and language have been simplified and adapted to the comprehension of the most youthful and the plainest minds.

It was but a few days since that I received a journal from Ireland, under an address, in which I recognized the autograph of an accomplished lady and a faithful friend. Unfolding it to see what it contained, which it was supposed possessed interest for me, my eye fell upon an account of a public examination at the already celebrated (Temple Moyle) *Agricultural Institute* in Ireland; and truly was I gratified to see there, so fully carried out, all that the friends of enlightened Agriculture have hoped for or fancied in the way of agricultural education. I regret that I can only take room to transcribe a single passage. A fuller account, with the address of Professor JOHNSON, will be recorded in the "Farmers' Library." Of the examination, it states that—"It embraced every topic of interest to the enlightened agriculturist. Among other subjects treated of, were these:—The Nature and Composition of Soil—Draining—Subsoil Plowing—Rotation of Crops—Manures—The Composition of Vegetable Substances—Gases—Minerals—Fermentation—the different kinds of

Wheat—Varieties of Rye and Barley—the best Soils for these Grains—Potato Culture, &c. The result was most satisfactory. Of the twenty-five lads examined, almost all showed that they possessed an intimate acquaintance with practical Agriculture, and that they were perfectly conversant with the scientific principles necessary, in order to become intelligent and judicious farmers.

I must repeat one remark of Professor JOHNSON, to the honor of the Scotch people. It should be printed and hung up in letters of gold, and read by every Chaplain of every Legislative Hall, and by every Minister of the Gospel in every State of this Union, where education is neglected. He says "that the poorest Scotchman, on the smallest lot of ground, will deny himself the necessities—even of provision and clothing—for the sake of educating his children."

Substituting such a course of instruction as is here indicated, for our antiquated systems, it would surely come to pass in process of time and, at no additional expense, that our tillers of the soil would get to be a race of *real GENTLEMEN* farmers—in the true sense of the word—men whose hands, hardened by wholesome and honest toil, would yet have their minds imbued and conversations ornamented with all the various learning and literature associated with, and necessary to a gentlemanly, ay, and let me add, the most successful prosecution of the business of Agriculture. Such, my friends, is the character which we should all aspire to see, and which the *laws of every State* should be framed to secure for the free tillers of the soil of Republican America. Such men, so used to labor, and so blessed with intelligence, I know you have among you. Such a man, was the venerable patriot, TIMOTHY PICKERING, of whom I have heard it related that he was once, when Secretary of State, at a diplomatic dinner at the President's, when the fact of his being practically a working man, on his little farm, was brought into question; whereupon a disbelieving courtier asking him to let him examine his *hand*, received a grip like that of a blacksmith's vice, and was quick to cry *peccavi*. May the time come when every farm in our land shall be cultivated by such cultivated men!—then and not till then shall we have realized the glorious promises of national independence, and all the blessings of free government—for after all—

What constitutes a State?

Not high-raised battlement or labor'd mound,

Thick wall or moated gate;

Not cities proud, with spires and turrets crown'd—

Not bays and broad armed ports,

Where, laughing at the storm, rich navies ride;

Not starr'd and spangled courts,

Where low brow'd baseness wafts perfumes to pride;

No! MEN, high-minded MEN;

Being called on so unexpectedly to pronounce

a discourse on your principal, and I hope favorite pursuit, I must confess that I came some days since to enjoy the hospitality of an estimable citizen, and to look around, not exactly to spy out the nakedness of the land, but to get some idea of your locality, your soil, your staples, and your Agricultural habits. A view of Long Island, such as is afforded by a ride along the Railroad to Boston, gives an unfavorable impression to the traveler who comes and goes, and carries away an idea of barrenness beyond all power of redemption. For myself, not altogether unacquainted with other and better portions of the Island, and with your wise and free use of ashes, fish, and other purchasable manures, I was prepared to find a different and a better state of things.—I had heard of your nice salt marsh and clean artificial hay, and had seen some of the fine horses that live on it. The fame of your Newtown pippins had reached me in Maryland, where the soil and climate are said to improve them—your fine, fresh, and delightful game, of land and water, had, for some months that I have resided in your great Emporium, made part of my daily “bill of fare;” but I confess to you that I was not altogether prepared for so many evidences of skillful and economical culture—culture, as far as I dare venture to judge or pronounce an opinion, of the mind as well of the soil. As the Queen of Sheba said unto Solomon at the sight of all his magnificence—“the half had not been told me.” You would have no reason to blush, if you could realize the prayer of Burns,

“Oh, wad some power the giftie gie us,
To see oursel as ithers see us.”

Above any Agricultural community with which I am acquainted, except, perhaps, game little Delaware, you carry into practice the truth which every one knows, but which too many disregard—That *unless you feed your land, your land will not feed you*; and hence I am persuaded money is more freely expended for manure on Long Island, than in almost any other district of the country. First, your soil is of a light hungry nature, permeable and open to the roots, of the plants, and readily yielding, in a single season, all that it has for their nourishment, and therefore demanding the restoratives, without which it would as certainly cease to produce, as the cow without feed would get poor and go dry. Another reason which makes it obligatory on you to buy and spread freely is, that from your proximity to market and the excellence of what you have to sell, you are naturally tempted to turn that into cash, which many other farmers by means of their domestic animals, or in the shape of litter, turn into manure. Hence it would be as unjust towards your land, as it would be impolitic in yourselves, not to give back in the shape of manure, a por-

tion of the elements for the succeeding crop, which you have carried off and pocketed from the last one. To this day how many are there who act upon the system of wasting or selling off all the materials of which manure can be made, and neither making or buying any in return; forgetting the homely adage, which every good housewife understands, that, “Always taking out of the meal tub, and never putting in, will soon come to the bottom!”

I presume not to say, on observation, but let me put the question to your own candor, for it is a practical one of vital importance; do you who buy none—or in addition to what you buy, do you economise and turn to account every particle of everything which can be converted into sustenance for plants—as everything may that is susceptible of putrefaction or decomposition. Do you send to the byways and highways for the means of making, if it be but a shovel-full of manure, for even that much would give you a good hill of corn? Do you reflect how much and how directly every load of manure helps virtually to cheapen the price, by giving more fruitfulness to the labour, of the men you hire? Particularly I would ask, do you take measures to save every drop of that which is regarded in the best cultivated districts of Europe as the richest treasure of every farm—I mean the liquid manure. By well-constructed tanks all is collected and saved. Among other contrivances, a simple one is used to which every one might have recourse, to save all the offal of the dwelling and kitchen. They have a tight box, fixed on the frame of a common wheelbarrow, in which all is collected and removed for the time to an ash pit, the common stercorary of the homestead. Gentlemen, a word to the wise is enough. I merely ask the question, and as Paul Pry says in the play, “Hope I don’t intrude!”

I have recently heard it said, by an old, observant and most respectable member and officer of this society, as worthy of note, and I mention it more for the general benefit than for yours, that those had been generally the most prosperous in this township who had been known to *expend most money for manure*! I may mention as a fact which has come to my own knowledge, that the hay of your artificial meadows is esteemed to be far superior to that of low land or natural meadows, and doubtless the fine quality and exceedingly cleanly character of your grains as well as grasses, proceeds from the use of ashes and well-rotted manure, and that which is the seedless product of your invaluable salt marshes.

But, gentlemen, after all, to talk about my giving you advice, why, I would as soon have undertaken to instruct Napoleon in the art of war, as to teach a Long Island farmer, after what I have seen, how to make wheat or corn.

or oats, or grass. Have not your annals recorded the fact that Farmer John A. King, in reaching to take off the first premium, has got up to 98 bushels to the acre, and yet was not the victor—and have I not sent to my native old wheat-growing State, Maryland, a specimen of white-bearded wheat grown by Mr. Harold, weighing 65 pounds, and utterly exempt from every species of extrinsic matter?

If, gentlemen, I might name one thing to which, from my limited views, your attention might be turned to advantage, it would be that you should begin to look for profit to the higher cultivation of a *greater variety of fruits* than I have seen growing on the waysides—you should remember, I respectfully suggest, that you have yet to meet a still more formidable competition than you have yet encountered, in the sale of all the great staples of Agriculture, which will bear transportation from the borders of the great lakes in the far west—a sort of transportation which will become yet cheaper in proportion to the quantity offered, and which injures nothing on the way by jolting or violence. True, by the instrumentality of your great public works (honored in passing be the memory of Clinton!) the proceeds of many industrious millions, must in time be brought into competition with yours; and at this you might repine, were it possible, without the vast trade which these works insure, to sustain the millions on your borders who will in the same time, be consumers of your produce. But cut off these public works, exclude that far distant competition, and what then? Your great and growing cities would dwindle into insignificance—rank and loathsome weeds would overgrow the paths of industry, and a second Volney would come along to meditate in view of their ruins, and say, as of Balbec and Palmyra—

"And now a mournful skeleton is all that subsists of this powerful City! Naught remains of its vast domination, but a doubtful and empty remembrance! to the tumultuous throng which crowded under these porticoes has succeeded the solitude of death. The silence of the tomb is substituted for the bustle of public places. The opulence of a commercial City is changed into hideous poverty. The palaces of the rich have become a den of wild beasts; flocks fold on the area of the temple and unclean reptiles inhabit the sanctuary of the gods! Ah! how has so much glory been eclipsed? How have so many laborers been annihilated? Thus perish the works of men, and thus do empires and nations disappear!"

Where then would be your market, and what the value of your lands? But as circumstances deny the monopoly that short-sighted selfishness might like to enjoy, prudence suggests that you should with circumspection prepare for the changes that imperious circumstances will force upon you. Do not these considerations invite you to a more extensive and more careful cultivation of the various fruits and culinary vegetables—beyond what may conduce to the health and comfort of your own family—in order to

supply the necessary and the luxurious demands of an immensely populous and opulent City?

I confess to a decided partiality for these smaller branches of industry, because they are in their nature more domestic. Excellence in the management of gardens, orchards, and flowers, while it demands a certain degree of polite knowledge, at once indicates and cherishes the better feelings of the heart. Justly, then, may we extol the liberality and good taste of some of our opulent merchants, who, in the midst of their multifarious engagements, lend some of their time and the well-earned fruits of their enterprise to the embellishment of neighborhoods with villas and grounds, such as many around Boston, and, no less beautiful than those, Mr. Man ices's, in your own vicinity—such villas as may be supposed to have displayed the munificence of illustrious sages of antiquity, whose virtues were as eminent as their fortunes; and who, in the midst of luxurious splendor, continued to steal occasions to withdraw, and in every way to evince their partiality for the country. Trees have always seemed to me to have a sort of living or social quality—a power of engaging our affections by adventitious circumstances or associations, which few if any other inanimate objects possess in like degree. There is an old *Poplar*, on the college green at old Annapolis, which has tried the wings of many an unfledged poet—and been borne in affectionate remembrance by every succession of graduates to all parts of the world, for the last sixty years. What money would purchase the Spanish chesnut in the classical ground at Belmont, seat of the late Judge Peters, near Philadelphia, from a nut planted by the *hand of Washington!* or the ivy that, planted by the great English orator, Fox, still clings to the sacred walls of Lagrange, the hallowed residence of Washington's friend, the great and good Lafayette. He who introduces a new vegetable from foreign parts, or a tree fit for ornament or timber, better deserves to be rewarded with the honor and respect of his country, than many military heroes to whom monuments have been decreed by people and senates infatuated and servile.

Why not let us chronicle, for a Long-Island Captain ROCHESTER, the credit which I am told is his due, for having brought to this country the *Ailanthus*, or the tree of Heaven, in the ship *Lion*, from the East-Indies. A tree which has few equals in the ease with which it may be propagated, or in the rapidity of its growth; and, moreover, it is now said to rival, after a certain age, the weight and solidity of box-wood; and, if so, might it not be profitably cultivated in plantations, for practical uses.

If there be any radical mistake in your agricultural economy, a transient observer like myself, not fully initiated in all the reasons that con-

trol your practice, might be led to inquire how it is that you seem to give almost exclusive preference to *horse*, over *ox* or *mule* power, for the plow, for heavy work on the farm, and for transportation on your excellent roads?—exactly reversing, in this respect, the habits of the sagacious farmers of the old Bay State, whose circumstances so nearly resemble your own to all appearance, and to which State New-York seems accustomed to go annually for apostles, if not for examples, to enlighten us in the agricultural art. There, Agricultural Societies, after full deliberation, and with the express sanction of such wise counselors as the late John Lowell—*clarum venerabile nomen*—have expressly refused to offer premiums for horses of any kind—esteeming them the most expensive of all machines, animate or inanimate, employed in the business of the farmer.

As to the *ox*—they contend that he costs less to raise—is easier to break—lives on coarser food—consumes less—for gearing, shoeing, and grooming, costing almost nothing—and is ever ready for his work. That, while the horse is every day lessening, the ox is every day improving, in value—is exempt from diseases—and is even more valuable dead than alive, being in every part and parcel of him available, even in his hoofs and his horns.

And, then, as to the *mule*—in strength fully equal to your light lands—the planter of the South and the farmer of the South-West will tell you that his life, on the average, is more than double that of the horse; and, therefore, the capital in that heavy item is only to be half as often renewed. I think it's in the "Pickwick Papers" that Sammy Veller asks the coachman, "Did you ever see a dead donkey?" "No."—"Did you ever see a man that had seen a dead donkey?" "No!"—"Did you ever see a man that had seen any other man that ever saw a dead donkey?" "No!"—And yet, gentlemen, I do not maintain that the life of this hybrid is everlasting; but I do know that the late General Ridgely, of Hampton, Maryland, who owned large iron-works, and employed between fifty and a hundred, once told me that if any man would make him a gracious gift of a full set of horses, on setting out in life as a young farmer, and require him to keep up the stock, he would reject the offer. Mr. Jo. Patterson, of Baltimore, conducting the same business on a large scale, with uncommon sagacity and circumspection, lately told me the same thing; and I have understood that when Mr. John Ridgely, of Hampton, succeeded to that magnificent estate, there was in one of his father's wagons an entire team that had worked together for 24 years!

I am not unaware that your reasoning is, and presume not to dispute its force, that you have

to keep a span of horses any how, for your family to go to town occasionally, and to church on Sunday; and you tell me that the Ladies could not be reconciled to the use of these long-eared, hard-headed beasts! Well, this may be so; and far be it from me to refuse you credit for thus consulting their taste and their wishes.—Doubtless it is but one example of universal submission on Long-Island to the same resistless influence. But you must allow me to add that I hardly ever met with a housewife who, if her 'lord and master' would only condescend to enter into a minute and frank explanation of his views and situation, would not cheerfully make any reasonable sacrifice of pride, or fashion, or personal indulgence, to promote their common good. How often does the wife lend her husband her house-servant, and her dairy-maid, and even her cook, to go out to help him on the farm!—Ay, I have seen her pull off her very apron to be used by the seedsman in sowing his grain! And besides, after all, this antipathy to driving mules is but a national prejudice—an opinion; but opinion, it is said, is the queen of the world. For an illustration, look at Spain—the very home of the superb Andalusian horse. There the royal family and the grandes monopolize the *privilege* of driving mules—a privilege almost prohibited to the plebeians. There are now several teams on the mail line along the rich limestone valley of the Shenandoah! But, to come nearer home—in sight of this town, my friend Mr. Milhaud does, with a pair of mules, all the labor and hauling for his farm, on the margin of your extraordinary prairie, which stretches around for so many miles, and which, I learned with surprise, is abandoned to pasturage—its bosom never having been marked with the traces of a plow.

Nevertheless, gentlemen, I presume not to say that you have not good and sufficient reason for deciding in favor of the more active, slightly, short-lived, voracious, expensive and inedible horse. If the ladies insist, why, there's an end of the matter; for we all admit that

"Where a lady's in the case,
All other things give place."

And there's no use in looking for other reasons, when one is all-sufficient—else I might attribute your predilection to something of that spirit of chivalry which at once produces and is produced by a passion for *earth unrivaled goers* as you have on Long-Island—like the horse of Adonis, described by Shakspeare, in the universality of his knowledge—

"So does your horse excel a common one,
In shape, in courage, color, pace, and bone."

One thing more I will venture to suggest.—Small as are your farms, generally, compared with such as I have been accustomed to see in

the South, they must yet be tilled, in a great measure, by hired force, such as your neighborhood affords. Is it not, then, a matter appealing as well to your interest as to your benevolence, that measures be taken to confer some honorary distinction in the way of encouragement on laboring men, who habitually hire out, to establish for themselves a character for *sober and moral habits*? And that married men, in like circumstances, be induced to improve the appearance and comfort of their humble residences, by planting vines and shrubbery, and otherwise causing them to present that aspect of neatness, which every passer-by would regard with admiration, as signs that rarely deceive, of more than ordinary merit and rectitude on the part of the inmates?

More than mistaken—even wicked—is the suggestion that such simple adornments of his cabin are unsuited to the condition of the laboring man! Rather let the poorest be encouraged to construct, of unhewn posts, the rudest sort of bower about his door. Nature will kindly assist him to cover it with the honey-suckle and the jessamine, that ask but little care; and, then, what so sweet as his own *sweet briar*, which, the poet says,

"Grows along

The poor girl's pathway and the poor man's door?"

Kindly lend your countenance, even at some expense, if need be, to effect this reform; and the wayfaring traveler, as he passes, shall remark to himself that, within the sphere of this Society's influence, even the poorest show signs of melioration, and partake of the common refinement. Were it not that I dislike to appeal to all sinister motives, in a case which so forcibly addresses itself to the better feelings of our nature, I might add that your kindness would be remunerated in the improved value of your district, for it would then possess superior attractions for the very sort of people whom all would be most ready to welcome. In this work of charity, I undertake to answer for the hearty coöperation of every good housewife and every fair daughter on Long Island. Nature formed them for such offices; and he that invokes not their smiles on every good undertaking is lamentably ignorant or regardless of the best means of success.

For the Ladies, themselves, where is the mansion or the cottage in Hempstead, or its vicinity, that does not display more or less of that refinement which the love of flowers indicates; and which, when once it breaks out, spreads with a natural and wholesome contagiousness over a whole community, prompting all to unite in the Apostrophe—

"Soft roll your incense, herbs, and fruits and flowers,
In mingled clouds to Him whose sun exalts,
Whose breath perfumes you, and whose pencil
paints.

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And here the way opens for me to fall, for the occasion, into the track of one of my eloquent predecessors, though prudence would warn me not to call up in contrast with my own, the classical and brilliant performances of any one of those who have gone before me on similar occasions. Yet my sincere anxiety for the honor and prosperity of every one who lives by the plow, prompts me to quote for your recollection this remark of Hon. Senator DICKINSON, of New-York: "And is it not," said he, "lamentably true, that the extreme doctrine of rewards and punishments, which has practically obtained, by general consent, for the last few years, and has been upheld and justified by all parties who have had the dispensing of patronage, has done much, very much to withdraw men from the sober pursuits of industry, and induced them to embark their little all upon a sea of political troubles?—To forego the cultivation of the little farm, where peace and plenty are the sure rewards of industrious and frugal habits, to gain a precarious subsistence by hanging upon the skirts of party; politicians by trade, and office-seekers from principle. If," added he, "Government seeks to entrench itself about with office and patronage, and relies for its strength on its parasites and place-men, and not upon the affections of the people, it cannot win by its justice, though for a time it may terrify by its power." I mean no more than he did, to make any but a general application of these remarks. In more than a quarter of a century that I have been laboring with my pen in the cause of the plow, I can safely say that never has a word been penned, or by me been permitted to be published, of a partisan character; but I have lived long enough to see and to deplore the increasing disposition of young men to abandon industrial pursuits for a slavish dependence on the capricious breath of power; so that now, addressing myself to those who are themselves, and who desire their sons to be, *independent practical farmers*, I hold it to be my sacred duty to exhort you to discourage all such enervating and miserable inclinations. Rather cut off a small corner of your farm and persuade them to seek an honest livelihood, however homely, by the sweat of their brow.

In the best days of the Roman Republic, ere luxury had enervated her people—when

"The nerves that join'd their limbs were firm and strong,

Their life was healthy, and their age was long;

it was by the addition of *two acres* of land, that a country discharged its obligation to its heroes. The neat, well-tilled little farm of my friend Mr. LAING, would have recompensed the heroism of an Horatius Cocles, or the virtues of a Cato. Teach your son, then, rather to till his two acres, than give up his life to a wretched alternation of

hope and fear, of getting and losing place. Let him remember that "a plowman on his feet is taller than a courtier on his knees." If we are industrious we shall never starve, for at the workingman's door hunger looks in but dares not enter, as Poor Richard says. Tell him then to—

"Plow deep, while sluggards sleep,
And you shall have corn to sell and to keep."

In the spirit, if not in the very words of my estimable friend, Hon. ZADOCK PRATT, himself a working man of the first order of benevolence and usefulness, when some days since addressing the Greene County Agricultural Society—"At the first symptom" said he, "of that infatuation that would lead your son to sell his birth-right for a mess of pottage, put into his hands the fable of the fat *town dog*, and the *lean wolf*."

The wolf expressing surprise at his sleek and

comely appearance, was informed by the dog that if he would accompany him to town, he would put him in the way of faring equally well; but when they reached the suburbs of the city, he espied something on the dog's neck, and so with a mixture of curiosity and suspicion, he asked his companion what it meant. "Oh!" said the dog, "that's only a collar with which my master confines me through the day, and forces me to sleep, that he may the better secure my vigilance over his property at night." "Ah!" said the wolf, "if that's the price you pay for your good looks, good-bye to you, my friend;—I go back to the woods. When hunger seizes me by the throat, Liberty will come with her sweet smiles to console me."

That my most youthful hearers may the better understand the fable, I have caused it to be illustrated as you see.



Finally, Farmers of Long Island, how striking are your advantages, and how many the considerations that may well warrant you in being proud of your position! With a soil easi-

ly labored, and, when well fed, quick in its returns—in close proximity, and with every mode of communication by land and water, with half a million of consumers every day, and every hour increasing—with even a second farm in your great Southern Bay, affording seventy miles of inland navigation, inhabited like the lake in the happy valley of Abyssinia, with fish of every species, and every bird that nature hath taught to dip its wing in water; and superadded to all these a climate of uncommon salubrity, what more can you desire or deserve? And then, again, for moral stimulus, what community was ever looked down upon by a more devout, a braver, or a nobler ancestry? Ornaments of the church—sages who kindled and kept alive the council-fires of the Revolution, and heroes who bled in its battles by sea and land! with your own amiable and accomplished Historian to rescue their names from oblivion, until history itself shall be buried in the ruins of time, and the brightest and most lasting renown of the Hero and Patriot shall fade away even as the halo of the setting sun! But though the genius of destruction shall obliterate from the records of fame, even such names as Long Island's learned and amiable Mitchell, her gallant Truxton, and no less gallant but less fortunate Woodhull, who scorned to save his life with one word of disloyalty to his country—shall not the influence of their virtues pass from father to son, while this beautiful Island stands out from the bosom of the ocean?

Gentlemen,—and now I address myself exclusively to you—as I have already abused your patience, let me detain you but a moment to advert to and express my humble approval of one remarkable feature in your proceedings; you have wisely manifested your sensibility to the rights and influence of the softer sex, by appointing Lady Committees to award your premiums for objects coming peculiarly within their province—persevere in this direction. It was not a bad maxim of the eccentric and ill-fated Crockett, to be sure you are right, and then go ahead. But excuse me for suggesting that they should command our respect and attention on yet broader and higher and holier grounds. I have alluded to the sort of education fitted to unite the practical and the intellectual Farmer, and thus secure a race of those “high-minded men,” who, after all, constitute a state. And shall I tell you how such men are to be secured?—No! gentlemen, you already anticipate me. It is by sound, and solid, and useful, and virtuous instruction to your daughters, who are to be the future mothers of the Republic—mothers whose holy office it will be to sow the first seeds in the virgin soil of youthful minds. They give inclination to the twig, and the tree is bent accordingly. Fear not that solid instruction will

impair the delicacy, or blunt the nice moral tact which is the proud attribute of their sex, and the admiration of ours. Does not the flexible vine bear as much pruning and culture as the oak? No, my friends, ignorance—ignorance is the great fountain, ever teeming with corruption! Knowledge at once strengthens and refines the soul, as art gives to “valor's steel” all its virtue, its pliability, its temper, and its polish. But polished or unpolished—alike in the palace or the hut—for all the good offices I have named, an Indian or an African sun may have burned upon her, still the heart of woman, like the diamond in the mine, is substantially the same! Sensitive as the harp of Æolus, it has chords responsive to the faintest cry when distress is in the wind. When the gallant Capt. Smith was bound for the stake, and the torch was already lighted, whose tears melted at once the heart of the savage and the chains of the victim? When the ill-fated Park was dying in the African wilderness of exposure and famine, shunned by his own sex, and threatened by wild beasts not more savage in their nature, who led him fainting to their hut, appeased his hunger and assuaged his thirst, and sent him on his way refreshed and grateful?

In both cases untutored savages, but mark! in both cases *Women!*

“O, Woman! in our hours of ease,
Uncertain, coy, and hard to please,
And variable as the shade
By the light quivering aspen made;
When pain and anguish wring the brow,
A ministering angel thou.”

WAKEFIELD.—*Guano as a Manure.*—At the meeting of this Club on August 15, H. Briggs, Esq. opened a discussion “On the beneficial effects of Guano as a Manure.” He began by observing—I shall make a few observations, which I hope will provoke a discussion. Farm-yard Manure is thought to be the best manure—but this is certain, that that kind of manure is best which has most of the nutritive properties of food for plants in it. Now let us compare the analysis of manure and guano:—

A ton of manure yields	2 lbs. 4 oz. of potash.
Do. guano do.	66 lbs. 8 oz. do.
Do. manure do.	1 lb. 10 oz. soda.
Do. guano do.	36 lbs. 15 oz. do.
Do. manure do.	5 lbs. 1 oz. phosphoric acid.
Do. guano do.	283 lbs. 9 oz. do.
Do. manure do.	1 lb. 4 oz. sulphuric acid.
Do. guano do.	93 lbs. 8 oz. do.
Do. manure do.	1 lb. 9 oz. chlorine.
Do. guano do.	62 lbs. do.

From which it will be seen that one ton of guano contains about as much potash as thirty tons of manure. One ton of guano contains about as much soda as 19 tons of manure. One ton of guano contains about as much phosphoric acid as 55 tons of manure. One ton of guano contains about as much sulphuric acid as 80 tons of manure. One ton of guano contains about as much chlorine as 45 tons of manure. Bones are said to be a valuable manure:—the principal fertilizing ingredients in bones are phosphoric acid and lime. Now, a ton of raw bones gives 580

lbs. of phosphoric acid. A ton of guano gives 283 lbs. of phosphoric acid. So that bones give double the phosphoric acid that guano does, but bones give no potash, soda, sulphuric acid, or chlorine; in yielding lime they are but equal. Rape dust contains no potash, soda, or sulphuric acid; so that if the land does not contain these, rape dust would be an inefficient or only partial manure, so far as the above three ingredients are concerned. There are only four manures which will do to be applied alone, viz: yard-manure, guano, night soil, and urine. The following are only partial manures:—soot, blood, bones, rape dust, and nitrate of soda. A comparison of night soil* and guano is as follows:—

A ton of night soil yields	6 lbs. 7 oz. of potash.
Do. guano do.	66 lbs. 8 oz. do.
Do. night soil do.	4 lbs. 10 oz. soda.
Do. guano do.	36 lbs. 15 oz. do.
Do. night soil do.	120 lbs. phosphoric acid.
Do. guano do.	283 lbs. 9 oz. do.

The comparative value of farm-yard manure and guano (leaving out the gaseous ingredients) appears to be this:—Guano is worth thirty times as much per ton as farm-yard manure, as far as solid fertilizing matters go. Practice confirms this—we have on our farms good Turnips from less than five cwt. of guano per acre, as from twenty tons of farm-yard manure; but it may be asked, is it equally durable? I say more so—farm-yard manure it is admitted, yields more gaseous ingredients, but being very volatile, much more flies off than can possibly do from guano. On the ground we tried with 5 cwt. of guano for Turnips, and twenty tons farm-yard manure, the crops of Turnips were equal. The next crop, which was wheat, the part which was tilled with guano produced the best crop. There is a clear benefit to the farmer; he can raise more Turnips by the aid of guano, which gives him more food for his cattle, and of course makes more manure for him afterwards. The prices of guano vary—say Peruvian, £10 per ton. Ichaboe, £7 10s.; but I find there is not such a difference in their virtues, so that I conclude Ichaboe is the cheapest. I cannot omit observing that guano is also useful in killing worms when it is applied to Grass land; they may be seen in immense numbers on the surface, but I think guano should be mixed with salt. Mr. Farrer, of Oulton, said he applied guano last year, and there was less Grass in June on the part where the guano was put than on those parts where it was not sown; but when I mowed it in August it yielded five tons from four acres, and the fog or after Grass was perhaps the best in the neighborhood; the quality of the hay was very good. I have tried it for Turnips as follows:—I put 6 cwt. per acre of guano, and 20 tons of manure, a mixture of horse, pig, farm-yard, and night soil. I spread each on the ground, and plowed it up into ridges, sowing the Turnips on the top. The manured Turnips took the lead, and kept it until about ten days since; but now the guano has outgrown them. I also tried guano on four large patches of Grass, in one place particularly. The Grass was distinctly better the first and second year. Mr. Hislop.—I have not used it extensively, especially in its dry or powdered state, but made into a liquid, two ounces to a gallon of water. I have applied the liquid twice in the year to Carrots and cauliflowers. Its effects in killing the grubs on Carrots was wonderful, although next year it did

not seem to do such execution on the vermin. When I tried 4 cwt. per acre with manure, the tops were greener, but no material difference in weight produced; but where I tried eight cwt. per acre, I had a bushel of Potatoes more in a row of eight chains long. On the crop of Barley the next year I observed a want of freshness where the guano had been sown. Where I sowed it on Grass last year, it did very poorly, but this year it shows clearly its beneficial effects.—The members came to the following resolution:—"That, in the opinion of this meeting, guano is an important auxiliary to the resources of the farmer in obtaining luxuriant crops, and is the cheapest and most important substitute for farm-yard manure, in some instances being found to produce as good crops at half the cost."

AN ADDRESS

To the Agriculturists of Great Britain, explaining the Principles and Use of his Artificial Manures. By Professor Justus Liebig. Muspratt & Co., Liverpool, Manufacturers of the Manure.

"TWENTY-FIVE years ago, when the manufacture of spa and mineral waters began, they met with violent opposition from the members of the faculty, as being deprived of all the good qualities of the natural ones—as wanting, in a certain *conditio, sine qua non*—in a *spiritus rector*, or vital power, which alone gave them any medicinal qualities. Those times have passed now—chemistry has demonstrated to a certainty what the constituents of those various waters are, and under what forms and compounds they are united in them. It has succeeded in combining them exactly in the same proportions, and in rendering them not only equal to the natural ones, but even more effective. Only from that time, physicians were induced to connect certain effects on the human body with certain elements in the waters, and were enabled, by the light of science, to add more of this element, or more of that; nay, to apply, instead of the waters themselves, the one active element alone, as is, for instance, the case with iodine in indurations and struma. It is well known, that at this moment there are extensive manufactures of mineral waters in England, at Berlin, at Dresden, at Vienna, &c."

The above is a paragraph with which Dr. Liebig commences a chapter on artificial manures in this pamphlet, and the application of the fact thus broached to the subject he discusses is very easy.

"I believe," he says, at p. 23, "that the same principle may be applied, partially, at least, to the use of manufactured manures, which, in England, has just been called into existence. Guano, that powerful manure, the efficacy of which, in a judicious application, has been clearly demonstrated by the testimony of the most intelligent farmers, cannot be supplied for a much longer period, because the rich stores in Chili and Africa must be shortly exhausted. As it is only in very dry countries that it is found, we cannot expect to discover many more places containing it, and what are we then to do? My attention has often been directed to the question, whether, according to our experience, and the present state of science, a manure might not be composed which could replace the genuine guano in its effects, and whether I could not, by a series of experiments, point out a way of preparing one equal to it in all its chemical and physical properties."

* This night soil includes the urine with it.

The fact that guano, like the mineral water, occurring in nature, may be advantageously replaced by artificial preparations, has long been acknowledged. Such a manure, "applicable to all descriptions of soils," should contain, according to Professor Liebig, earthy and alkaline phosphates, the alkalies, sulphate, muriate of potash, common salt, salts of lime, especially gypsum, and salts of ammonia. *The proportion*, however, in which these should occur in manure must differ according to the crop it is to be applied to; for—and this is a fact which has been illustrated to a great extent during the past few years, and to which, doubtless, the attention of chemists will be devoted for many years to come—the mineral food required by one plant is different from that needed by another.

"Hundred weights of the ashes of the following plants, contain—

	Straw of				Ashes of Hay.
	Beans	Peas	Potatoes.	Clover.	
Alkaline Carbonates,	22.38	12.43	4.34	31.63	3.0
Carbonate of Lime,	39.50	47.81	43.68	41.61	6.9
Phosphate of Lime,	6.43	5.15	5.73	11.80	40.8
Phos. of Magnesia,	6.66	4.37	7.82	0.91	
Sulphate of Potash or Soda,	12.40	10.15	.....	2.23	8.84
Magnesia,	.....	.....	.....	.....	21.8
Chloride of Sodium or potassium,	0.28	4.63	2.8	2.27	3.06
Ph. of Iron, Ph. of Alumina, &c.,	.....	.....	.....	.....	1.27

"In these analyses Silica has not been taken into account, as it is found in all soils, and need not be supplied. One hundred weight of the ashes of Potatoes, and the seeds of the following plants, contains—

	Potatoes.	Wheat.	Beans (Vicia faba.)
Alkaline Phosphates,	15.75	52.98	68.59
Phosphate of Lime and Magnesia,	9.00	38.02	28.46
Phosphate of Iron,	0.20	0.67	0.00
Sulphate of Potash,	15.07	0.00	1.84
Carbonate of Potash and Soda,	51.70	0.00	0.00

"What is wanting of the 100 in the above analyses is sand, coal, or loss. From these researches it appears, that for stalks and leaves we require other elements than for seeds. The former contain no alkaline phosphates, but they require for their development and growth, a rich supply of alkaline carbonates and sulphates. On the other hand, the carbonates are entirely wanting in the seeds, which, however, are very rich in phosphates. It is sufficiently obvious that a rational farmer must supply both, as well as all the others. If he supplies only phosphates, and does not restore the alkaline carbonates, his soil will become gradually barren—it will be exhausted in those necessary elements for the development of stalks and seeds, without which no formation of seed can be expected. If he supplies the alkalies, lime, and sulphates alone, in a given time he will get no more grain. All constituents of the manure, if they are supplied alone, have this great defect, that by them the soil is impoverished in other equally important substances. No one of itself can maintain the fertility."

The theory of artificial manuring seems to be now perfect; but it is questionable, if a perfect practice can yet be founded upon it. What we want to enable this, is a perfect knowledge of

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the mineral and organic constituents of plants, and that we do not yet possess, as any one may ascertain by comparing the statements of chemists on that head. However, Professor Liebig is certainly one of the best existing authorities on the subject; and, if in the present stage of chemistry in its application to agriculture, farmers are to trust to chemists at all, we know not to whom they should give more of their confidence than to him. He has prepared prescriptions for manures to be used for the different cultivated plants, and he has intrusted the execution of them, under competent superintendence, to Messrs. Muspratt of Liverpool.

There is much very useful information in this pamphlet which these gentlemen are circulating as an advertisement of their connection with Professor Liebig, and which will doubtless interest the reader even though he should not test its accuracy by the purchase and use of Professor Liebig's manure. In saying this, we do not mean to cast any doubt upon the soundness of the principles on which this manure is prepared—that is unquestionable—but there may be variable circumstances connected with the action of manures with which we are yet unacquainted. Certain it is, that though we may know how to manufacture a successful manure, we have not yet the means of making a perfectly economical one. Ability to adopt true *economy* in the art of manuring, depends not only on a knowledge of what plants require in order to their full development in all the different stages of their growth; but also on a knowledge which we do not possess, of the stores which Nature has ready for their use, both in any particular soil and in the air. It would be wasteful to supply them with all they want independently of these.

[London Agricultural Gazette, Sept. 20, 1845.]

THE GIANT OX.—This noble and extraordinary animal of the Devon breed, of which we have several times spoken—nineteen hands high, and upwards of 3,700 pounds weight—was disposed of by raffle, on Friday last, at Pratt's Old London Inn, in this city. There were 120 subscribers at a guinea per share, and it was agreed that the last ticket drawn should be the prize ticket, or in other words, the person to whose lot it fell, should be the winner of the giant ox. 118 tickets had been drawn, and the subscribers whose tickets had not been drawn, were—Mr. Burgois, of Sowton, bailiff and hind to John Garratt, Esq. of Bishop's Court, and Mr. Hodge of Plymouth, horse dealer, who was represented by deputy. These now agreed to go shares, and consequently the ox is theirs. The winner had to spend £5, and those by whom the ox was put up, a similar sum. [Taunton Courier.]

RED DEER.—It is well known that the red deer in some districts arrive at a larger size than in others. As an instance, we have just heard of two magnificent stags, lately killed in Ardour, of the respective weights of 408 lbs. and 353 lbs., as killed. When cleaned, including skin, head, and horns, they weighed 335 lbs. and 295 lbs. The fat on the haunches of these animals measures in depth above three inches. The head of the smallest, though not so fine a head as the former, has twelve good points; the other ten. [Inverness Cour.]

WINE MAKING,

AS PRACTICED IN NORTH-CAROLINA, BY REV. S. WELLER.

Addressed to Doctor D. P. GARDINER, Chairman of the Executive Committee of the American Agricultural Association. Read at a meeting of the Association, and communicated for publication in the Farmers' Library, at the request of the Editor.

A PORTION of the grapes on the trellises and arbors being fully ripe, then comes the vintner's harvest. And the busy scene is presented us of visitors in the vineyards (the uninvited having paid their entrance fee) plucking and eating the beautiful, healthful fruit, and the grape-gatherers collecting for wine or table use.

Our grape gathering is in a very plain way—though that of the Scuppernong is somewhat peculiar. For gathering this kind, a large sheet or piece of cloth, with poles fastened to each end or two sides, is held by a couple of hands under any part of a canopy; and another, with a forked stick, shakes the branches above the canopy, and all the ripe grapes fall and roll into the middle of the cloth. Other kinds of grapes are plucked off by hand, while the gatherers stand on movable fixtures, to enable them to reach the grapes hanging underneath high canopies, or on the highest parts of the trellises.

The grapes are carried to the presses, where all are arranged with a strict regard to order and cleanliness. First, all but the ripe and sound berries are separated, if necessary. Next, they are passed through a machine for mashing them, consisting of a frame placed on a vat or half-hogshead, with two turned rollers (and hopper above) so adjusted as to distance, as not to break the seeds of the fruit. To one end of each roller is a handle, by which two persons turn, and a third feeding through the hopper, enough grapes for 20 barrels of wine may be mashed in a day.

Grape gathering commences here toward the last of July, and continues till October.

From about twenty varieties only I make wine as yet; though more than a hundred others, bearing small quantities, and different kinds ripening in succession, gives me time to operate in wine-making as an incidental employment.

Four or five hands, large and small, can make their barrel or more of wine a day. It is important for all the wine in one vessel to be made of grapes gathered within the period of, at most, two days. The Scuppernong vine ripens its berries in succession, and requires repeated gatherings, therefore, by shaking, as before described, under the same vine or canopy. And, in consequence of thus ripening, we have its

most delightful, healthy fruit, commonly from the first of August till the first of October.

Some other kinds of vines ripen all their berries at one time; and there is, therefore, no trouble in separating the green ones before mashing the ripe. My Halifax is remarkable for this property. All the fruit on each of its large clusters turns a dark blue at the same time; and a few weeks thereafter, being fully ripe, they are fit at once, after pulling off, for the compression, or table use. The Norton Virginia Seedling clusters are not altogether free from green berries. The Cunningham has, on every cluster, more or less green dwarfish berries, when all the rest on the cluster are fully ripe. This last is especially excellent as an eating fruit, but for wine the above circumstance is rather an objection. Yet there is no additional trouble on this score by the late Mr. Herbermont's favorite method, of making a very superior white wine out of a dark-colored grape, as he details in his short treatise on vineyards.—The process is that of putting the grapes, without mashing, under the press, when the fully-ripe berries only are broken, and have their juice expressed; while the green or unripe ones, on examination after pressing, are found whole. These last, or all the refuse, may be put through the mashing machine and pressed for an inferior wine, vinegar, or distillation. But the juice of the ripe fruit only has added to it the requisite quantity of sugar or brandy, and put into the cask to undergo the very slight fermentation that soon converts it into a very sweet, pleasant, and peculiarly healthful wine.

Through the above process I make wines, quite colorless, from several kinds of dark-colored grapes, that otherwise, or by fermenting with the skins, (which gives the coloring,) would be a lighter or darker red, according to the period of fermentation. I frequently manage my Halifax in this way, and the wine thus made cannot be distinguished from the colorless Scuppernong as to its appearance; though when this kind is fermented in the must, it is of a brilliant red hue.

I state here that the Isabella is particularly remarkable, in this region, for ripening its fruit at successive periods; that is, in seasons when,

in despite of the propensity to rot, the fruit matures at all in any quantity. The Catawba, also, is somewhat prone here to have its berries ripen successively on the same cluster. The Vine Arbor, like my Halifax, all ripen at the same time. So do most others that I have cultivated to any extent; as the York Madeira, Lenoir, Somerville, and Norton's Virginia Seedling.

Here it may be proper to observe that the quantity of juice, in proportion to the quantity of grapes, varies pretty much in proportion to the size of the berries, though there are some exceptions thereto. The Scuppernong is one of the largest of grape fruit. I have frequently singled out the largest berries of a quantity gathered, that individually measured three and a half inches in circumference. Years since, one was found in my vineyards that measured four inches round; but this was quite extraordinary, and appeared more like an apple than a grape; and, by certificate, stating its dimensions, in the "American Farmer," I challenged its equal. But none as yet, I believe, has been found.

The Scuppernong fruit being large, free from stems, and very juicy, it is common to press four gallons of juice out of a bushel of grapes: from the Norton, Vine Arbor, my Halifax, and some other large-fruited, about three and a half gallons. While those of very small berry, like the Elsingburgh, and those of wild growth, or woods grapes, as called here, (of which there is a great variety in North-Carolina,) do not average but about two gallons of juice per bushel.—And besides being generally surer and better bearers, and more easily gathered in quantities, the large-fruited grapes are free from attacks of birds—for, it would appear, their bills are too small to grasp them. However, a little use of powder and small shot soon frees a vineyard from the visitation of birds.

But to return from this digression to the wine press. The grapes being mashed, there are several ways of treating the mass, or must, according to the kinds of wine designed. But, not to exceed limits too much in this, I must defer treating of these for another letter.

You desire, you say, that in particular I should give our method of making wine in North-Carolina. I have to first remark that the methods in this State are various, according to the tastes and circumstances of the makers. But before stating some of that diversity, as pursued by myself and others, I will give the process that has uniformly succeeded with me in producing a good wine, that never spoils, and improves by age, though excellent in a few months. The secret of this process (a little diversified, as I shall presently show) is that of giving the wine a good

body at once, by adding enough of sugar or brandy to make up for the general deficiency of American grapes in saccharine or other matter, and, therefore, to prevent the acetous fermentation, especially in our hot climate. Indeed, in the warmest season of the year South, (where deep, cool cellars are also scarce,) there is no certainty, it would appear from my experience and information, of a *safe* issue of fermentation, even with a sufficient ingredient added, for a good body or strength to the wine, unless, also, recourse be had, otherwise and previously, to separating some, at least, of the extraneous matter.

For this end, after having tried various methods, as that of passing the juice, after pressing, through clean washed sand, (a troublesome affair,) I have found that folds of a woolen or flannel blanket answer every desired purpose, and are attended with the least trouble.

The following is the plain, simple and continued process of making our Scuppernong wine: After our grapes are mashed by our roller machine, before described, and the mass folded in a sheet, inside of a crib of upright laths, under a press, and the juice expressed in the manner of cider making, several folds of a woolen blanket laid on a frame, over a vessel or tub, strain out, as the juice passes through from the press, most of the extraneous matter; and, thus purified in part, to it is added two pounds, or more, of sugar to the gallon, or a portion—say a fourth—of good brandy or spirits. After being put into a clean cask, fumigated with a sulphur match, and shaken well, the cask is bunged up, and put away in a cool place or cellar. No farther process is required. A gentle fermentation will ensue; and in the succeeding fall or winter, if choosing to rack the wine, it will be found to be clear, without artificial fining, and can be drawn off so from the lees, by a spigot at a sufficient distance from the lower part of the cask. At the bottom of the cask will be found a gallon or so of dregs or lees. I say if *choosing* to rack; for the wine may be kept safely any length of time on what lees there are. And occasionally it may be drawn off as wanted by a spigot above the lees. If wishing a superior article of what may be called the Scuppernong Champagne, doubly refined sugar of the best quality is to be used.

Wines of colored or other grapes may be successfully made in the same manner as above stated for the Scuppernong. And if colored grapes are mashed, the juice will have a slight color, and be a sweeter wine than that which is regularly fermented with the skins, &c. But if a wine not so sweet and highly colored be desired, I put the mashed ingredients into an open-headed cask, covered with a blanket, allow it to ferment till the skins of the grapes and other ex-

traneous matter float on the surface of the mass ; then by a spigot, near the bottom, I draw off the clear juice, and, steaming it through folds of a woollen blanket, as above stated, I add forthwith the sugar or spirits ; after this, treatment in the cask, as before stated. But when I wish to make a white or colorless wine, from colored grapes, I pursue the same plan as first named, with the exception of gathering the grapes in the morning, ere the sun heats the skins and tinges the juice, and without mashing the grapes. By putting them under the press whole, those fully ripe only, after pressing, will be found broken. Those not broken may be mashed for an inferior wine or vinegar ; and, also, when the clear juice is drawn off, in case of fermentation, with the skins in the open-headed cask, the rest may be pressed for the like purpose.

Once I tried the plan of fermenting with the sugar or brandy added, under the impression of making a more homogeneous liquor thereby ; but I found no advantage in the way anticipated, and that it was difficult to arrest the fermentation after drawing off ; and, not unfrequently, the wine would, in spite of efforts to save it, run into the acetous fermentation.

The foregoing process of wine-making I have found attended with uniform success, and the wines made thereby have been pronounced, by most competent judges, excellent in all respects.

A very good Champagne kind of wine can be made by bottling the Scuppernong, or other kinds of juice, after straining as before directed, and putting it up at once in strong Champagne bottles, corked and wired.

A remark or two in allusion to a few circumstances in the foregoing methods of wine-making :

1. The folds of woollen blanket will repeatedly become clogged with the extraneous matter, and (especially if the grapes are very ripe) the blanket must be washed or exchanged several times in making a barrel of wine.

2. Again : when racking, the cask into which the wine is again turned must be well fumigated with a brimstone match—say a strip of cloth dipped in melted sulphur, and set on fire, and on a thin wire put into the middle of the cask, and the bung put in for a short time ere turning the wine therein.

I find, by carefully straining, as stated, and putting the requisite quantity of the preserving ingredient, (the quantity depends measurably on the kinds and ripeness of the grapes, &c.) it is not material whether the cask be filled up, or whether different quantities be put into it on successive days ; though it is well to fill each cask at once, if convenient. If the spot where it is placed be kept dark, the better for the safe-keeping and improvement of the wine.

I do not think it worth while to detail other

methods of wine-making in our State, for the above I have found safe, easy, and effectual, for a good wine ; and others I have tried without uniform success, and with considerable loss.

Of course, the better the sugar or brandy, the less required to the gallon of juice to insure the keeping. I was once told that one-seventh of brandy was sufficient, but experience has shown me that a fourth is the medium quantity of spirits. I have tried putting in less than two pounds of sugar when making a sugared wine ; if less is used, the juice or must should float an egg. But this I found of somewhat doubtful issue. I have tried putting in the keeping ingredients at different periods in the same cask as found needful, but conclude it is decidedly best to put in plenty at once. Yet, in some instances, I have saved or recovered injured wine by adding more sugar or brandy.

With the juice of well-ripened grapes, strained as before stated, and one-third good spirits and two pounds of doubly-refined sugar added to the gallon, a most pleasant, healthful and medicinal cordial is made, according to trials and opinions of the best judges of the quality of cordials.

As to wines, however, I have found it best to use either sugar or spirits, and not both at once or for the same article.

Colorless wines may have any shades of red color imparted to them by smaller or larger proportions of scorched sugar or baked apples put into the cask. But sugared wines must, if it is deemed proper to resort thereto, be colored with sugar and brandied with apples, or the unity of taste is injured. But I deem it best, in general, to let the white wines remain so. In short, as to selection of grapes and materials, and the process of turning their *quintessence* into wines, (I have utterly failed in attempts to make raisins, though not in preserving grapes for months,) much depends on the pains taken, as well as on other matters, as to degrees of excellence and value of the wines. And therefore, of right, prices vary, in my establishment, from \$15 to \$50 per barrel. Hence, too, I presume, the diversity of prices in the East. And as an instance of diversity of treatment there, I have been credibly informed that, ere shipping the celebrated Port wine, for safe-keeping on the voyage, &c., they add one-third of good brandy.

I beg leave to add that, in the midst of a press of cares and employment, I have now finished (I fear, though, in a very imperfect manner,) my third and last number on the subjects you suggested. That yourself and co-partners, in advancing the benign cause of American Agriculture, in its diversified branches, may have the happiness of seeing so good an undertaking prosper in your hands, is my sincere desire.

NOTES ON THE PRECEDING,

MADE AT THE INSTANCE OF THE EDITOR BY COL. EDWARD CLARK, OF BROOKLYN, N. Y.

HON. JOHN S. SKINNER,
Editor of the Farmers' Library.

Dear Sir—I have read, with much satisfaction, Mr. Sidney Weller's various processes for making wines of various qualities. They may answer a valuable purpose in North-Carolina, and in the Southern States, or wherever the grapes, generally speaking, are gathered from uncultivated or unpruned grape-vines. Under such circumstances, the juices of the fruit are not sufficiently concentrated; or, in other words, the sugar or sweet principle is not sufficiently developed, and artificial means become necessary to preserve the wines produced from grapes so collected.

Ordinarily, common brown sugar or unrectified alcohol are added to the juice of the grape before, or sometimes after, fermentation, or the development of alcohol, with a view to produce a homogeneous beverage; but in every instance this practice must fail of its object, because the flavoring properties of the vegetable from which they have been produced will more or less prevail, and vitiate that of the juice of the grape, in proportion to the rate with which the adulteration has been made.

If the juices of the grape have not been sufficiently concentrated, and additions of convertible alcoholic materials become necessary for its preservation, then refined sugar or rectified alcohol may be added to the grape juice previously to its fermentation, in proportion to its poverty and the strength or quality of the wine desired; if a dry wine, a less quantity—if a sweet, a greater. But it should always be understood that such additions, no matter how well refined or rectified, or well fermented, deteriorate the flavor.

In cases where grape vines are closely pruned, the secreted juices become concentrated, and sugar, to excess, is formed in the ripe grapes. And, from such, raisins are formed by drying; or if juice be expressed from them, with regard to the object, not only strong dry, but sweet wines, are obtained, that will, with proper treatment, keep in improving excellence for a great length of time.

Should not a sufficiency of alcohol be developed by the fermentation of the grape juice, then from five to seven per cent. of good peach brandy may be added. It may here be remarked, an ample supply of leaven or native yeast is contained in the grape juice, to cause

fermentation; in fact, there is a superabundance of it, which should be suffered to escape from the bung-hole of the fermenting vessel, by keeping it constantly full—that is, if a sweet wine be wanted. Otherwise, the cask should not be full, and the feculent matter which rises to the top of the liquor may be permitted to partially subside; when the cask should be filled and closely stopped, but be daily watched to ascertain whether the vinous is running into the acetic fermentation. Should such be the fact, the liquor must be immediately racked off, or refined, in casks that have been previously sulphured; which is performed by introducing a small piece of cloth, fastened to a piece of wood, dipped in fused sulphur and ignited, and then thrust into the bung-hole. When it ceases to burn, it is to be withdrawn, and the cask tightly closed. So prepared, the wine is to be put into the cask, and all connection with the air cut off. The liquor has still to be watched, and, if it has an acid tendency, it will be necessary to repeat the sulphuring or racking process. Should the wines so treated have become acid, a small quantity of limestone or chalk may be added, say sufficient to neutralize it. If the wine be very acid, and it be attempted to correct it by the addition of limestone, and a large quantity be added, it will impart a slightly bitter, though not unhealthy taste, which is not found except in wines of inferior quality. A very important arrangement for the preservation of wines, and preventing the removal of the fermentation, is their stowage in *deep cool cellars*.

If attention be paid to the foregoing remarks, many of the difficulties which present themselves in the manufacture of wines, by the ordinary processes practiced in our country, will be avoided. But a considerably large book might be written on this subject, and then much would remain to be learned before the whole art of making good wine could be reduced to practice, even by the scientific cultivators of grapes and the treatment of the vintage. I hope the few hints thus hastily presented may prove of some service in directing those who are turning their attention to this important branch of our Agriculture.

With great respect, I am
 Your friend and ob't serv't,
 EDWARD CLARK.

Brooklyn, Oct. 9, 1845.

We understand that in Madeira the most alcohol ever added is ten per cent! [Ed. Farm. Lib.

FARM REGISTERS....HOW KEPT, AND USE OF.

WE do not design to write an essay on the obligation and usefulness of keeping *Farm Registers*; the thing is too apparent to require argument or elucidation, and if the true secret could be known, the explanation of the reasons of those who omit to keep such Registers and to note their daily transactions, would be found to be the result of ignorance or indolence; and it is not easy to say which is the more disgraceful of the two. Surely it would be easy to call up the manager or head laborer at night, and from his account make a brief entry of the work that had been done—the articles sold and bought, and the prices obtained and paid.

A merchant on the smallest scale, keeps his books as indispensable to enable him to judge whether he is going backward or going ahead in his business; while, as we fear, a very large proportion of the Farmers and Planters in the United States keep no sort of books whatever, whereas, it ought to constitute, in the judgment and esteem of every man of good sense, not only a high point of duty, but one of his *recreations*—for the want of which, men take to snoozing or drinking, or electioneering, or card-playing. Where there is a son in the family old enough, (and if not a son, the daughter,) he should be trained to keeping the Farm Register.

One establishment on which this thing is done with unfailing punctuality and exactness, is the "Indian Hill" Premium Farm of Massachusetts, and we are not without a violent suspicion, that it was a view of the Farm Register and accounts, which contributed to the distinction awarded to the proprietor, as much as practical excellence or extraordinary productiveness in the management of the Farm.

It would give us pleasure to present a view of that truly curious, antique and venerable mansion and grounds, together with the accounts of management and products, so well and fully published from time to time in that useful Journal, the N. E. Farmer. But our present purpose is to give an extract from the farm book of Mr. Harold of Long Island; who, while he takes the lead in all work on his farm, keeps an exact Register, as well of Thermometrical and Barometrical as of practical observations and operations every day. The notes which follow, are selected not for any thing particularly striking they contain, but merely to show the *manner* of doing the thing. For, after all, we have observed

that no explanation is so good as this sort of *demonstration*. It is here seen that in all time to come he can turn back and see how the force on his farm was occupied any day in the year, and what course of manuring and cultivation any and every part of his farm has undergone. We give it only as an *example*—a leaf from a book!

Copy of FARM JOURNAL kept by JOHN HAROLD, Foster's Meadow, Hempstead, Long Island, 1844:

April 24. Marked out corn ground; planted Mercer potatoes round do.; commenced planting corn; heard the Whip-po-wil the first time this spring.

25th. Burned butts of posts, and commenced setting picket fence; planting corn; fine day.

26th. Finished planting corn; planted white dumpling beans; stuck and hoed peas in garden; painted roof of wagon-house; making picket fence.

27th. Carted 12 two-horse wagon loads manure from yard; finished picket fence; planted beans.

29th. Pulled up mullen from grass ground; potatoes coming up in garden, (planted 28th March;) whitewashed fences.

30th. Done up carpenter's jobs; planted potatoes, sugar corn, squash and pumpkin seeds; planted out lettuce; sowed Cantelope melon seeds in frame; barometer down.

May 1. Painted wagon; white-washed chicken house; rain most of the day.

2. Hoed up potatoes; planted out egg plants; turned manure; added 10 lbs. Sulphate of Ammonia.

December 31. Remarks and condition of lots.

Lot 1. Orchard.—Orchard grass and clover cut for soiling and hay, part for garden purposes. Peach trees stand well in bearing, much improved by washing with soft soap, and tarring about the roots and digging in swamp muck; small trees dug round to keep grass away; native sort of peas succeed best.

Lot 2. Timothy and clover put down with wheat and rye; on rye part not so well taken, I presume from the rye standing too thick, and falling down; fed off in the fall.

Lot 3. Timothy and clover second time of mowing the part mentioned last year as poor and full of weeds; much improved by a dressing of guano and silicate of soda; mowed nearly as much again as last year.

Lot 4. Same as before, dressed in the same way.

Lot 5. Part of this lot has been mowed four years; dressed it with guano and silicate of soda; mowed better than any time before; part oat, a good crop weighing 40 lbs. per bushel.

Lot 6. Part new mowing ground from wheat, part pumpkin patch; 1½ acres corn, 8 rowed white flint, from which was husked 252 piled up bushels of ears, from manure made see April 2d, which was coarse cow-yard manure mixed with sulphate of ammonia, sulphate of soda, lime

and charcoal; this corn was extremely sound; part of the lot had sedge-hay plowed in, part old corn stumps burned up and spread over, which part was decidedly best.

South Farm. Just purchased; the land has had no manure for seven years; part of this was planted with yellow corn on June 4th. and manured as follows: 14 loads of very coarse stuff was carted out on May 11th. to which was added lime, ground bone and sulphate of ammonia, and wetted with a solution of sulphate of soda; cut up on Sept. 25th, and yielded nearly three times as much as the same quantity of ground planted to yellow corn in the same lot; planted two weeks before; but with common yard manure, from experience I find the addition of lime, ground bone, and sulphate of ammonia,

converts our common yard manure into a valuable compost, requiring much less quantity in the hill or on the ground, and producing nearly as much again; this I find by repeated experiments, and at small cost; 100 lbs. of sulphate of ammonia, at a cost of \$8, lasting me for all my manure heaps for a year, with 2 horses and 3 cows and 3 hogs. I have made 110 two-horse wagon loads of good manure, adding any rough stuff I could scrape together, and each load when well-rotted, sufficiently to plow under, weighed not less than 20 cwt. each. My plan is to make up my heap: on the top, spread fine charcoal and sulphate of lime, and cover it up with soil; in 12 to 18 days I have found it sufficiently fine to use.

PETZOLDT AND LIEBIG.

REMARKS ON THEIR IDEAS IN RELATION TO GREEN CROPS.

To the Editor of the Farmers' Library:

Sir: I have been much pleased in looking over your periodical with the extensive range of subjects relating to Agriculture that you propose to keep the public informed on, and it is with the hope that yourself or some one as capable, may afford the desired information, that I submit the following remarks.

A perusal of Petzholdt's lectures, while it places in relief the views of Liebig, and presents clearly to us several true principles, certainly suggests many defects, both in the lectures themselves and in the chemistry of Agriculture, and our reliance on the certainty of chemical deductions has been much diminished by fallacies, as they seem to us, in his reasoning. The definition of *soil*, for example, would have answered his own argument better, had he considered it a medium to supply inorganic nourishment and support to the plant. This would have included the ocean, which, by his own showing, and by the analysis of others, contains all the elements, mineral and gaseous, necessary to the growth of its numerous vegetable tribes. These elements are soluble, and, therefore, is the sea the most perfect soil, because the nourishment it contains is in a complete state for the assimilation of vegetable life; in the very state, to which a scientific Agriculture endeavors to reduce annually, a part of the super-stratum of the earth.

His ideas, in relation to green crops, are more extreme, if possible, than Liebig's; and, if true, should forever discourage any attempts at adding humus to the soil; unless when the farmer has sufficient capital to resort to other methods; or if any should be tried, clover, and clover only, inasmuch as all other green crops require too

much cultivation to pay their expense, or their roots do not penetrate far enough into the subsoil, to draw its constituents up to the soil proper. Yet this last consideration has been vindicated by experience, since it was first proposed, a hundred years ago. And I apprehend few persons have given a fair trial to other green crops, on a soil deficient in humus, but are satisfied that it is better to employ them, than to wait for the disintegrating influence of time and frost. Very few are the American agriculturists who have a knowledge of Chemistry, who do not think, with Liebig himself, that plants differ in their growth, according to the scarcity or abundance of humus in the soil.

It is evident that the disintegrating power of the plant itself, is left wholly out of account, and consequently that plants are merely passive with respect to the soil. But calculate the amount of inorganic constituents taken from the soil by several exhausting crops, and, we doubt not, you will find it far exceeds the amount fitted for assimilation by the agencies of air and water, and to this will a proper system of rotation in some measure have reference.

It is a great defect in the present system of organic chemistry, that the agriculturist has no accessible means of determining the exhausting power of his crops. It will not, I suppose, be answered, that the per cent. of ashes of plants is determined. I find that chemists differ very widely in respect to this; and I find that the diversity becomes still more evident, when of these ashes we wish to calculate the component parts. I notice a remarkable agreement in the analyses of wheat, pp. 69 and 70, and of that alone. But I would know, when we reap 10 bushels of a particular species of

wheat from an acre, weight 62 lbs. to the bushel, and averaging, say 40 grains to the head, how much of its several constituent salts is thereby taken from the soils, and how much of these must be replaced. I will suppose given for the solution of this problem, the analysis of the soil as accurate as may be, the usually observed meteorological phenomena, and any other data it may be in the power of a practical man to furnish. I think such a problem as this within the scope of a JACKSON or DANA to investigate. I conceive that a close relation will be found between the nitrogen assimilated by any plant, and some inorganic constituent (alkali?) required to feed it. I conceive, also, that the soil and atmosphere exert a reciprocal influence on each other; a full supply of *soluble* mineral salts causing, in the plant, a larger appropriation of carbonic acid and ammonia, and when the former are wanting, favorable weather may impart such vigor to the plant, as to enable it to decompose the soil.

Passing by many other points, I would only remark in our author's use of marl. Will not the planters of this peninsula acknowledge the beneficial effects of a layer of marl, only one half an inch thick, 1-24 of his amount?

St. Mary's Co. Md.

LOWOOD.

THE FARMERS' LIBRARY IN DELAWARE—MEDITERRANEAN WHEAT.

Extract of a letter to the Editor from the President of the New-Castle Agricultural Society, giving an account of their late meeting, and sowing Wheat early among Corn.

WILMINGTON, Sept. 20, 1845.

ON the subject of the "Farmers' Library," I have not heretofore had time to write you. I will now say it exceeds my most sanguine expectations, and is every thing the farming interest could desire in this or any other country. You will soon have a number of subscribers in this County, through your agents here. Several copies have been ordered by our Society. I shall in a week or two be at more leisure, and will do all in my power to promote the circulation of the "Library" in this quarter. Now that you have the command of an extensively circulated journal, I wish to draw your attention to the practice of Mr. Joseph Hossinger of this County, *seeding Mediterranean wheat amongst corn*—communicated to me as President of our Society, and which was so satisfactorily received last year, that about 500 acres were thus put in, and with *complete success*—this year twice or thrice as much, and yet this method is not known as it deserves to be. Mr. Hossinger's plan is to manure his land that he intends for wheat, well in the Spring, and put it in corn, and in the last plowing in July or first of August, to seed it

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with Mediterranean wheat—cut the corn off and stack it as usual—tho' more open at bottom, to admit air and light; and then husk the corn when it is dry enough to house, and haul off the corn fodder—the growing wheat is not injured by stacking the corn on it in this way. The product has been from 20 to 39 bushels of wheat per acre—a good corn crop, and a saving of expense of fall plowing, &c. Experience in this latitude with this variety of wheat, shows also that it may be seeded much earlier than was supposed, and with a certainty of procuring a good crop. Nothing has astonished several gentlemen from wheat districts, in riding with me lately, more than the green fields of wheat among corn, after the manner of my friend Hossinger, and were surprised that this Delaware practice was not generally known in so important a matter as the *production of wheat*.

As ever, truly your friend,

JAMES W. THOMSON.

ENTOMOLOGY.

[Editorial Correspondence.]

To JOHN S. SKINNER, Esq: Your discourse on insects in the second number of the Monthly Journal of Agriculture is what most farmers very much need. There is great ignorance prevalent on the subject of destructive insects. Few are able now to distinguish their friends from their foes. "What! friends among insects!" some one will say, "I thought all insects were enemies to vegetation, and should be destroyed without much discrimination." If any think so they are in error, for many insects are carnivorous, living on other insects, and doing injury to no vegetable production. All persons have noticed the swift-running, dark-colored beetles in their gardens and fields. In the day time they may be found under stones and boards, or in the thick grass. These insects should be protected, for they destroy vast numbers of grubs and caterpillars, that live in or near the ground. They destroy them in the larva-state as well as in the perfect state. They have been known to eat up the cut-worm at the root of a cabbage-plant—but the gardener seeing the plant destroyed, and after digging finding nothing but the insect destroyer, has taken this to be the enemy, and crushed him forthwith. Many vegetable benefactors have thus been exterminated, for want of a little entomological knowledge.

But I am not about to write a long letter on this subject. My object is to commend to your notice a work "on insects that are injurious to vegetation," by Dr. T. W. Harris, of Cambridge, Mass. It was published in 1841, agreeably to an order of the Legislature. Although it professedly treats of the insects of Massachusetts, still it will prove a useful book in the hands of

any intelligent farmer in any State of our Union. It is a work of some 460 pages, written in a chaste, clear style, and freed as much as possible from technical terms.* Dr. Harris's Report will prove a great help to those who have little time for such investigations, for he not only describes such insects as are injurious to vegetation, but points out the best modes of checking their ravages.

Yours respectfully,

S. W. LEONARD.

Dublin, N. H.

MANAGEMENT OF BEES.—Having tried, during a period of twenty-seven years, all the different systems of bee-keeping possessing any merit, and having found in each defects prejudicial to the welfare of the bees, I have directed my attention towards establishing, if possible, a sound and advantageous system. All wooden hives or boxes are objectionable. They are too hot in summer and are too cold in winter; besides, they retain moisture, which is injurious to the comb and health of the bees. I consider ventilation to be not only unnecessary but injurious; for the higher the temperature inside the hive is, the greater is the draught. Bees are very uncomfortable and irascible in windy weather, or if blown upon. At all times they may be seen anxiously stopping up every hole which they can find, particularly those, if any, in the upper part of the hives. This, therefore, speaks against ventilation. The natural heat of the hive is conducive to the health and activity of the bees, no instance to the contrary being known. It is only when the warmth of the external air somewhat assimilates to that of the hive, that they come out cheerfully. I have known a very high degree of summer heat drive bees apparently from their hives, and upon examination the honey and wax was more or less liquefied on account of the hive being exposed to the direct rays of the sun. This is a very serious evil, but one which is remedied by colonies of my construction. The following objects carried out are essential to the profitable keeping of bees; viz. large well-made straw hives to contain strong stocks, having no other opening than that at the bottom, and having no metal in any part of them, that being a conductor of heat. The best possible protection against mice and every kind of insect. Easy access by the bees to the glasses, &c., for working in, and facility for removing the latter: the whole to be impervious to the weather, heat, cold and wet. For effecting these ends, I would recommend a straw case, worked with split cane, 3 feet 9 inches in length, 16 inches in height, and 14 in width, inside measurement. At 3 inches from the bottom, a floor of $\frac{1}{2}$ inch deal should be fixed on supports at each end, and two bridge-shaped pieces should be placed at 14 inches from the ends. This case should stand on a wooden bottom 2 inches in thickness, 18 inches in width, and 50 in length, a little cement or mortar being put all round. For the purpose of preserving the case, I sew canvass on the outside, and size and paint it green, every spring giving it a fresh coat. A circular hole should be made in the middle of the floor 10 inches in diameter; on

this should be placed early in April a large last year's swarm in a new bell-shaped hive. Two or three convenient holes, 3 inches in diameter, must also be made in the floor on each side of the stock-hive, and fitted with thick bungs. A door-way should be cut in the bottom at $1\frac{1}{2}$ inches from each end, 2 inches in width, and $\frac{3}{4}$ ths of an inch in depth; and a small appropriate piece of something should be nailed under each doorway for resting boards on. The doorways should be nearly closed in August with slips of wood, and opened again in April. The stand should have four legs, and each leg should rest in an iron or flower-dish containing water, with a little oil on the top of the water; over the top I tie canvass to keep out moths, spiders, &c.; a neat span-shaped painted wooden roof should cover the whole well over. In the first summer the bees will probably only fill the space under the floor, but if they appear, by collecting about the entrances, to want room, a small glass may be placed over one of the holes, first removing a bung by turning it round. Early in April is the proper time to commence putting on glasses, and when they are quite filled with honey, fresh glasses should be put on, and in a day or two the full ones may be removed by drawing a fine wire under them, and replacing the bungs. These hives will last for many years, and will yield in good summers one cwt. of honey, with but little trouble. Every three or four years the inside stocks should be examined by fumigating with fungus, and any old comb used for breeding should be removed. When additional stocks are required the glasses should not be put on until the bees have swarmed; at night the young swarm may be put into a straw case. I do not find that the queen quits this hive to breed in the glasses, nor do I ever find bee-bread in them. Early in November I close the doorways with mortar, leaving a quill as a passage for air; and it is advisable, at the same time, to hang a piece of sacking in front, until early in February, in order to prevent any warmth from the sun from affecting the stock. By bee-keepers pursuing this system, they will establish really valuable colonies. The cask-hives made by Mr. Sholl, are defective, and must cause disappointment at the royal Apiary at Windsor, where some have been placed. The awkward metal entrance, when the bees can alight upon it, will in summer burn them, and in winter cramp them; and the bottomless cases, when filled, cannot be removed on account of their being fixed down with comb.

[G. L. Smartt, Enfield.

SULPHURIC ACID AND BONES.—With reference to Mr. Pusey's suggestion as to the propriety of using bone-dust (dissolved in sulphuric acid) along with compost, instead of water, for turnips, I can confirm his idea from practice—having last year manured 5 acres with only 13 bushels of bone-dust dissolved in 270 lbs. of sulphuric acid and 150 gallons of water. After standing 24 hours, the liquid was mixed with 3 cart-loads of coal-ashes, and left to remain for a week, during which time it was turned over two or three times. The mixture was then drilled along with the seed, and the result was a fair crop of common turnips, off a piece of poor land, without other manure, and at the cost of only 12s. 9d. per acre.

[P. Davis—Roy. Eng. Ag. Soc. Jour.

*The best way to enable an Editor to judge of the value of a work, is to send him a copy. [Ed. Lib.

THE FAIR OF THE AMERICAN INSTITUTE.

THIS great Annual Exhibition of choice specimens of American art and industry, in many of their important branches, was favored with fine weather, and attracted, as usual, a great concourse of people, who have, we apprehend, been more dazzled and agreeably amused with the beauty and variety of the show, than struck with any visible and important step in the march of improvement. Some have suggested that the recurrence of these shows is too frequent to admit of any very perceptible progress in the melioration of the arts and sciences and trades they are designed to illustrate; still, they serve to keep the public advised of what can and has been done; and to keep cultivators, artisans and manufacturers, up to their mettle. The place of exhibition, however, is altogether inadequate to a thorough and convenient *national* display of that extensive and multifarious character, in a manner to do justice to the fabricators, or to enable the public to see and examine everything, as they ought with deliberation and convenience.

The City authorities would well consult the welfare of their constituents by purchasing extensive grounds, and constructing an edifice, worthy of the occasion, sufficiently capacious, and expressly arranged for a full and distinct exhibition of every article; and an adequate number of qualified persons should be employed, and well paid, beside the presiding and executive officers, to arrange and superintend the whole exhibition in all its departments, and a clear and precise official programme of each day's operations should be advertised in advance, and paid for, in every daily journal in the city. It is doubtful whether it would not be better to have them like the Mechanics' Institute in Boston, to come round once in *three years*, instead of annually. There would then be time for improvement in the various arts and mechanical inventions, and agricultural implements, and animals, and productions, to show itself distinctly; and committees of the ablest artisans, practical men, and men of science should be selected with great caution; men of the highest character, known throughout the Republic for their skill and proficiency, whose traveling expenses should be paid and who would undertake, *con amore*, to note and report upon whatever was *new and important*, as connected with the several great branches of American industry—and where no advance had been made in any, let that

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fact in like manner be noted. It would be an obvious part of the duties of such committees, to designate what is *yet wanting* in the economy of every pursuit, and for these *desiderata*, to recommend suitable prizes to be offered; and more especially should liberal premiums be proposed for *ESSAYS and REPORTS* on subjects connected with the progress and the wants of Agriculture and other pursuits, such as demand and can only be illustrated by careful experiment or profound scientific investigation. Investigations from which no profitable result is to be anticipated unless conducted by men of deep research, whose time is their subsistence, and who in this country are generally expected to *work for nothing and find themselves!*

Some timid calculators may at first be disposed to object to these views, as impracticable, on the score of *expense!* But the few who are invested with the noble trust of legislating for a great and daily growing community like this, should endeavor to look beyond the day or the year, and to elevate their views to the height of their undertaking. Let the City Councils consider that an addition, sufficient in itself to make a very considerable town, is annually made, not only to the numbers but to the capabilities of New-York, and let them frame their measures accordingly.

Men in power are too apt to circumscribe their views and action to the present state of things, forgetting that almost every day is sensibly extending the horizon, and augmenting the wants of a community, such as that of New-York, which, even in the last three years, has added more than fifty thousand to its numbers. In 1860, even before the boy, just entering his teens, will have finished his scholastic education, New-York will embrace within its precincts 750,000 people! What undertaking in the way of city improvements and public accommodations are beyond the requirement and capabilities of such a population? And, after all, what can be more beneficent or more remunerative than liberal expenditures for public markets, public exhibitions, and free public lectures on all the elegant and useful arts, and all industrial and scientific studies and pursuits? Ay, and for public amusements too? Are not such institutions and lectures provided and sustained by taxes levied on tangible property. And, again, do not these public and free exhibitions

and lectures on the sound principles of political justice, contribute and inure to the value of the very property taxed, far beyond the amount of these exactions? If, for example, after the long-sighted policy which has made Paris the queen city and great attraction of the world, New-York were, (in addition to the purchase of extensive grounds in the upper suburbs of the city, and the erection there of capacious building for these periodical exhibitions of art and industry,) to engage on liberal salaries, the ablest lecturers (the most profound men that high pay could command) on the fine arts—on medicine and law—on the natural sciences, and the science of Agriculture and mechanical philosophy, and make these lectures free for all who might choose to come and whet (for they could never satiate) their appetite for knowledge; such a course of proceeding, and such expenditure, would contribute more than any thing that has ever yet done to the ornament and glory—ay, and to the growth and prosperity of the City; nor is there a property holder within its precincts who would not have occasion to applaud such measures as contributing more than any individual investment to the value of his estate.

It is as much the duty of those entrusted with the municipal administration of a great city to watch over its renown, and to build up for it a character, as it is to guard against fires and robberies.

Instruction profound and gratuitous, and the periodical distribution by enlightened and impartial authority, of suitable honors and rewards for excellence in the Arts and Sciences and in Manufactures and the products of Agriculture and Horticulture, would draw within its wall men the most distinguished for learning, and men of redundant wealth from all quarters of the world, just as they are now attracted to expend millions in Paris, until it would come to be esteemed as the surest passport to success, that a man should have learned his profession or trade in New-York—to have won distinction and prizes in her Schools and Lyceums and exhibitions would be accounted and prove in fact a substantial honor.

Not only for the purpose of illustrating our own views, in this particular case, but to give what may convey hints worthy of regard to State and even County Agricultural Societies, we will take room here, once for all, to give a list of the prizes offered in 1845, and 1846, by the Highland and Agricultural Society of Scotland. We do not give them, in any idea, that precisely the same premiums should be offered here, by the State Agricultural Society, or by the American Institute. Our design is to impress upon the mind of the reader, and of all enlightened friends of Agriculture, who go for

its improvement and elevation as an *intellectual pursuit*, how much more conducive to that end, must be the development of principles, and the information which such prizes must elicit, than a mere *spectacle*, or congregation of things fat or beautiful, without being new, in themselves, or the fruit of any new discovery in science or practice. Of how much more value would be a description of Professor Mapes's discoveries in the manufacture of a great staple of the country, or a dissertation from Doctor Gardner or Hallowell on the connection of Chemistry with Agriculture, or of Muse on Entomology, or Doctor G. B. Smith on the capacity and readiness of the country for the production of Silk, or Bogardus on Mechanics, or Underhill on the Grape and Wine-making, or French or Wilder on Horticulture, than the mere exhibition of sleek horses or fat swine, with the sight of which all are familiar, and which illustrate no new principle, nor new application of old ones—nor imply any extraordinary skill in their production.

In giving preference to measures which shall be calculated at once to stimulate and provide food for the *mind*, and thus lead to economical Improvements and useful Inventions, we do not propose by any means to undervalue the effect of *public exhibitions of the best results that have already been obtained* in Arts and Manufactures, or in practical culture. Too many days, and weeks, and years have we devoted to their encouragement—getting them up, we may venture to say, in some places where it had never been attempted, and was deemed impracticable. No! No! We shall make ourselves justly obnoxious to no such insinuation. We well know that these Annual Exhibitions of a few of the best yet attained of Grains, and Vegetables, and Fowls, and Animals, and Implements, and Manufactures, serve as models for instruction to young Farmers and Mechanics, and to spur their ambition to rival them; but the *great desideratum* is to have the *mind at work* to discover what new means can be brought into play, or how Labor and Materials at command can be more skillfully applied to obtain greater products from given resources. This is the direction, too, which it behooves us to give to the thoughts and the minds of the young American Farmers. Let them be stimulated to *think*—to think, for example, as the men must do who bear off the prizes for best Essays on the subjects here below enumerated. But first let us note the *order* in which these Premiums are classified by the Highland Agricultural Society of Scotland, unsurpassed perhaps in the world for practical intelligence. There, the *first Class* is ESSAYS AND REPORTS ON SUBJECTS CONNECTED WITH THE SCIENCE AND PRACTICE OF AGRICULTURE; II. AGRICULTURAL MACHINERY; III. IMPROVEMENT

OF WASTE LAND; IV. CROPS AND CULTURE; V. LIVE STOCK; VI. PRODUCTS OF LIVE STOCK; VII. COTTAGES; VIII. WOODS AND PLANTATIONS.

Now let us note the different subjects designated by the Society, and coming under Chap. 1.

CLASS I.—ESSAYS AND REPORTS ON SUBJECTS CONNECTED WITH THE SCIENCE AND PRACTICE OF AGRICULTURE:

1. Experiments on the Effects Attending the Immediate Application, and the Continued Results of Certain Special Manures,
2. Feeding of Stock,
3. Radical Excretion of Plants,
4. Analysis of Oats,
5. On Raising Improved Varieties of Agricultural Plants,
6. On the Cultivation of Red Clover,
7. Influence of Plants on Dairy Produce,
8. Reports on Irrigation,
9. Construction of Tanks,
10. Potato Blossoms,
11. Allotment Systems,
12. Kelp,
13. Disease in Potatoes,
14. On the Nutritive Properties of Turnips Raised with different Manures,
15. Tussock Grass,
16. Spade and Fork Husbandry,
17. On the Advantages of Dibbling in Sowing,
18. Electro-Culture,
19. Wool,
20. Analyses of the Ashes of Plants,
21. Experiments in Deep Ploughing,
22. Vegetable Productions of India, China, and America,
23. Reports on Improved Rural Economy Abroad.

CLASS II.—AGRICULTURAL MACHINERY.

1. On the Comparative Advantages of Different Descriptions of Machines for Threshing Grain,
2. Invention or Improvement of Implements of Husbandry.

When we come in our next number to publish the explanation put forth by the Society, (which for want of room we cannot now do) the reader can judge for himself as to the exercise of mind, the degree of intelligence, and the class of men required to be employed in, and to battle for these prizes, and the usefulness, permanent usefulness, of the information which these Prize Essays must contain. It is in part from these identical Essays and Reports that we shall continue to draw for the columns of *this Journal*, as far as they are applicable to our own country. The experienced and indefatigable Editor of the *Cultivator* aptly observes in a late number, that "We have as yet no class of professional writers in this State, or in this country, who have given sufficient attention to the theory or practice of Agriculture, to enable them to furnish such Essays as grace many of the pages of the *Journals* of the Royal and Highland Societies. We can expect little more at present than the simple details and practical observations of men who have paid more attention to the labors of the husbandman, than to those of the student of Nature. From the attention now given to the subject, however, we may look for a gradual and a rapid improvement in our Agricultural Literature."

There is much of the force of truth in these remarks; but we apprehend there is more want of adequate and proper inducement to our writers to lend to Scientific Agriculture their time

and labor, than there is of the writers themselves. Let prizes of twenty and fifty guineas, or plate of the same value be offered; and we shall see whether on any given question we would not have men fully equal to the demand. Look at the Essay, for example, by Ruffin on calcareous manures—or the one produced by Mr. Thomas, with which we so gladly enriched the first number of the *Farmers' Library*, and the Essay of Professor Dana, lately published in the *London Agricultural Journals*; the Essay of Judge Rost, of Louisiana, which we have published, and that on the Natural History and Uses of Cotton, by Mr. Seabrook, now in course of publication, not to speak of Professor Emmons' Scientific disquisitions, with which his *Quarterly* abounds! We solicit, beforehand, the reader's attention to what we shall add on this subject in the next number—in the meantime we unite our humble expression of thanks to the Officers of the Institute, for their indefatigable and impartial discharge of their onerous duties.

The mere "Catalogue" of the more than fifteen hundred articles exhibited, occupies, in pamphlet form, thirty pages.

Mr. Walker, of the Horticultural Institute from Boston, well known for his taste and enterprise, made rich contributions to that Department, and by his obliging personal supervision, ensured the display of them to the best advantage, under the judicious and tasteful arrangements, and courteous management of Mr. Bridgman.

PEAT MANURE.—"A. Z.'s" inquiry about peat as a manure, is best answered by stating that peat contains the elements necessary for the formation of a rich manure, when proper substances, such as lime, marl, &c., are added to it, to decompose the tannic acid, and hasten the decay of the vegetable matter. Alone, and unprepared, peat appears to have no fertilizing property; but when properly dried and burned, the ashes have been found a good manure for grass lands and turnips; for turnips they are found to answer best in wet seasons. Quicklime will decompose vegetable substances, including peat: and the following will be found good proportions for making an excellent top-dressing for clover or grass:—One cart-load of quicklime, the largest lumps to be not larger than the fist, six cart-loads of peat, and a quarter of a ton of salt; the whole to be mixed together, and to lie in a heap six or seven months, and to be turned over two or three times during that period. Another capital method of converting peat into a manure, is by mixing it with fresh horse-dung, and checking the escape of the ammonia during the process of fermentation, by decomposing the carbonate of ammonia, and converting the ammonia into a sulphate by means of sulphuric acid.—Prepare your heap thus:—Four loads of peat, to be mixed in layers with two loads of fresh horse-dung, and, if great heat is evolved during the decomposition of the two bodies, cover up the heap with fresh mould, amongst which has been mixed a portion of sulphuric acid.

[English paper.]

PROSPECTS FOR GRAIN GROWERS.—In our view of the news from Europe, there must be a greatly increased demand, and one that will continue, for our bread-stuffs and provisions. The fact is, that with long continued peace, the population of England and the continent is increasing beyond their means of supply. It would be well worth the while of Indian corn growers to have a Convention and to adopt such practicable measures as we are fully persuaded might be adopted to get Indian corn introduced into common use by the laboring, and even the higher classes in England. One-tenth of the money expended to make experiments in the cotton culture in England by American agents, would effect it. In the Mark-Lane Express of the 22d Sept. we find the following:

Is there sufficient food in the United Kingdom for the inhabitants up to the time of the next harvest?

The harvest of wheat of 1844 may be considered the finest in quality and quantity ever known, proved to be so from the great supplies into the markets all over England, and also for the continuance of them. The harvest of this year, 1845, is, in the opinion of the writer, different in its nature and kind, the bulk of straw is much greater, and the crop of wheat may be considered about two-thirds of the quantity in bread, the yield being much less per acre, and the berry not so fine or productive; this quantity, with the remaining surplus of old wheat, would have been likely to have carried us on comfortably till another harvest, with a little assistance of foreign aid, and with a good crop of potatoes; but the question now is, our real situation, and what is best to be done? The writer cannot place the general failure of potatoes at less than a loss to the country of three months' consumption of wheat; and when we consider that the quantity of wheat and flour under lock is only equal to about two weeks' consumption for England, we are likely before another harvest, to be in great want of food; adding to our calculations the state of the whole continent of Europe; in no one State is the crop of wheat great; in others, starvation has already reached them. In Belgium, the government has secured to their nation plenty, by taking off all but nominal duties on all descriptions of grain. This will be their happy state as long as their government is disposed to avail themselves of it, if other nations do not adopt the same plan by way of safeguard: but what with the forecast of Belgium, and the high price of wheat in Holland, which country is already getting away from England our little foreign supply; and if the British government do not follow the example of Belgium, great distress and misery will, or may, follow before the harvest of 1846; but if the government should at once, to secure the English merchant, by rescinding the grain duties till the next harvest, it is likely they will bring, before that time, from far and near, a few millions of quarters in wheat and flour, thereby securing national plenty, at fair prices.

It is said, *Necessity has no law*; this is one plea for rescinding the grain duties for the short space of less than a year, and the example of Belgium is another. One farther remark seems to be called for. The present moderate price of wheat and potatoes is occasioned by there being

a good stock of old wheat not consumed, and potatoes being sold at any price they will fetch, because they will not keep. Pig meat is likely to continue reasonable from the same cause, as the best of the offal potatoes are given to them. Query—will there be in the spring, potatoes for human food, for pigs, or for seed? The answer is, at a very high price for seed.

ELECTRO-CULTURE.

THE results of experiments in ELECTRO-CULTURE are by this time generally ascertained: our own and all others of which we have heard show that no influence is exerted on the growth of plants by an electro-conducting connection between elevated and buried wires, arranged either as Dr. FORSTER has recommended, or according to other plans which have been tried. The word *electro-culture*, in fact, must, for the present, be considered a misnomer.

There has been no want of electric disturbance this season in the atmosphere—hail and thunder-storms have been more than usually frequent—and we are, therefore, bound to believe that the experiments which have been tried are conclusive upon the subject. Their results leave every body at liberty, just as before, to form their own opinions as to the influence of atmospheric electricity on the growth of plants—they only determine our ignorance of any means by which this influence can be increased or controlled.

We understand that many hundred acres, in various parts of the kingdom, have this year been subjected to Dr. FORSTER's process. Has all this labor been lost?—that depends on the object of those who undertook it. Doubtless, some, believing in the evidence which previously existed on the subject, have speculated in electro-culture as a means of profit—their labor certainly has been useless, and they must now blame either their own carelessness in not having previously sufficiently examined that evidence, or their own credulity in reference to what we must consider the imperfect observations of others. But, wherever the subject has been tested by any one anxious merely to determine for himself the accuracy of Dr. FORSTER's theory, the expense and labor which have been incurred cannot be considered lost, for the object of their outlay has been attained. An intelligently-planned and carefully executed experiment, if its results be ascertained and recorded, cannot fail: it is simply a question asked of Nature, and what the experimenter wants is—an answer: and thus the success of an experiment depends not upon the *character*, but upon the *obviousness* of its results. Now, the results of the experiments we allude to have been most unequivocal, and accordingly those who performed them ought to be perfectly satisfied.

The history of the excitement which has prevailed on this subject during the past year is very instructive: it strikingly exhibits the willingness of farmers to adopt the suggestions of scientific men—a willingness which greatly increases the responsibility of those who set themselves up as guides to agricultural improvement. [Agricultural Gazette.]

An English paper in answer to a correspondent, says—"Early autumn is one of the best seasons of the year for sowing Italian rye-grass, of which from two to three bushels per acre can be sown on land properly prepared and clean."

NOTE ON BROAD-TAIL SHEEP.

BY THE EDITOR.

THE following observations would more properly have been placed in juxtaposition with the chapter on the Tunisian Mountain Broad-tail Sheep, but the arrangements of the Printer, and the convenience of Editors, do not always jump together.

If the sheep confided to Judge Peters succeeded in continuing their race, it is more than was accomplished, either by those which were sent to Mr. Jefferson, or the more than one pair which were placed in our hands by Commodore Bainbridge, and otherwise. Mr. Jefferson said, that at Monticello, whenever the cross on the common Sheep was bred up to $\frac{1}{2}$ blood, the tail became so enlarged that farther procreation was physically forbidden. The same thing happened with those which came under our own observation, and we believe, also with some that helped to variegate the races of fine stock kept at Powelton, the property and then the residence of Col. Powel. No instance of procreation as between the full-blood, has occurred, but the contrary, within our observation, and hence, probably, the breed has run out; though it has not been many years since we remember to have seen a goodly number of apparently half-breed Lambs. Col. Powel once did us the kindness (*E Pluribus Unum*) to go through the Philadelphia market, where we interrogated the victualers as to the quality and popularity of the Lambs and Mutton in that market, of the mixed breed; and their testimony was unanimous in favor of the early maturity of the Lambs, and the excellence, in all respects, of the Lambs and Mutton which was supplied to that market from a touch of the broad-tail. They had never, said the victualers, had as early or as good Lamb since. And we understood that to this day, in New-Jersey, those who raise only Lamb for market, seek to get as deep into this race as they can.

In the 2d vol. of the memoir of the Pennsylvania Agricultural Society, pages 254-5, will be found certificates of eminent victualers, such as Lentz, Rusk and Groff, all concurring to the effect that they fatted in the flesh and on the ribs, far superior to most others. That they fatted with less food, and were more healthy than other breeds. "The Lambs sell the highest of any in the market, and are most sought after." "We never met," say Messrs. Lentz and Rusk, "with an unsound Sheep of this breed. We have kept an exact account of weights. We

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killed a ram of one year old, better than half blood, that weighed 23 pounds a quarter, well furnished with rough fat. An ewe three-quarter blood, two shears, 20 pounds a quarter, killed 10th June—20 pounds of gut fat in the ewe. The wool of the full blood or high blood, or when crossed with good fleeced Sheep, is in great estimation, and yields more to the fleece, the flock through, than any other breed we have been acquainted with."

Under all circumstances we are satisfied that the blood of this race of Sheep might be employed with satisfaction and profit; more especially by those who breed early Lambs for market. But whether they are now to be had, or whether it would be profitable and expedient to import them—in any case we deem it to have been our duty to preserve the most remarkable history extant, of their importation to the United States, in connection, especially, with the memoir of the agricultural services of the one patriot farmer, to whom they were confided by another, and both of whom were Presidents of Agricultural Societies, and eminently active in encouraging all efforts to improve the husbandry of their country.

We remember to have last year seen some Sheep of this race, just then imported, on the Presidential grounds at Washington, and understood they had been sent or brought in as presents to ex-President TYLER, in whose hands they will doubtless be well cared for, on the beautiful shores of the James River. In the hands of that eminent promoter of "*Annexation*," it is not to be doubted they will multiply and flourish. For attention, care, and kind offices, *quadrupeds* rarely prove ungrateful. Whether *bipeds* do, those in power have the best opportunity to judge—when in retirement!

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WEIGHT OF CATTLE.—A correspondent of the Doncaster Chronicle, [England] gives the following admeasurement of six heifers, as to the increase in height and girth, during a run of grass from May-day to Michaelmas day.

| No. | Age. |     | May 13. |        | Oct. 14. |        |
|-----|------|-----|---------|--------|----------|--------|
|     |      |     | Hight.  | Girth. | Hight.   | Girth. |
|     | yrs. | mo. | in.     | in.    | in.      | in.    |
| 1   | 2    | 4   | 52      | 71     | 53       | 77     |
| 2   | 2    | 2   | 49½     | 70     | 50½      | 76     |
| 3   | 2    | 0   | 53      | 72     | 53½      | 76     |
| 4   | 1    | 10  | 54½     | 75     | 57       | 79     |
| 5   | 1    | 7   | 50      | 71     | 53       | 77     |
| 6   | 1    | 5   | 48      | 67     | 49½      | 72     |

No. 4 an ox



## SHEEP AND CHESNUTS.

FROM all the periodicals that reach us, conducted by our colleagues and predecessors, we might select interesting matter enough to make up a most valuable miscellany, but as we suppose, and most sincerely hope that most, if not all, of them are taken by the patrons of the Farmers' Library, we think it better to give matter which otherwise they would not be likely to see.

We take the following from the 'Cultivator' because the first will be useful as a practical guide to those, of whom there are many in the South, inquiring for Sheep; and the second compresses very useful information in a small compass, about planting *Chesnuts*—a thing most providently neglected—and which needs to be particularly illustrated.

There is no planter, who, if he should live to be sixty years of age, might not provide an ample supply of Locust and Chesnut timber *if he would*. By-the-by, Mr. MANICE, at his most beautiful residence on Long-Island, has the Spanish Chesnut in great number, of which he offered as many as we chose to take. They are now all gone.

**LIVE STOCK IN CONNECTICUT.—*Sheep*.**—Connecticut has many fine-wooled flocks of sheep, some of which we had the pleasure of examining in our late excursion through the State.

John Ward, of Salisbury, near Falls Village, has a flock of 700 Saxons. Their fleeces average 2½ pounds, and sold last year at 60 cts. per pound. In another part of Salisbury, we saw a small flock of Cotswolds, belonging to John C. Coffing, Esq. They were purchased of Mr. Devine, of Washington Hollow, Dutchess county, New-York.

R. G. Camp, Esq., of Litchfield, Ct., has a very superior flock of 170 Saxons. They were derived mostly from the noted flock of Charles B. Smith, Esq. of Torrington, Ct. The wool of Mr. Camp's sheep is very fine, and the fleeces averaged this season, 2 lbs. 14 ounces, which sold at 66½ cts. per pound. Mr. Smith imported two bucks from Saxony, in 1843. Both of these bucks Mr. Camp has used in his flocks. His lambs of the present season, many of them, are certainly very fine.

Mr. Lucas, of Goshen, N. Y., has a small flock of mixed Saxon and Merinoes, which are remarkable for the weight of their fleeces. Twelve ewes, six old ones and six yearlings, eight of which reared lambs, gave this season 61½ lbs. of well-washed wool—being an average of 5 pounds and 2 ounces.

Henry Watson, Esq., of East Windsor, has one of the best and most profitable flocks we have met with. He is a veteran in the breeding of Sheep, as well as other stock. He, in connection with Mr. Hurlbut, of Winchester, purchased some of the best Saxons of the first importation of Messrs. Searle, of Boston, in 1824. His present flock are of various grades of the Saxon blood then obtained, crossed with the pure Merino. His wool is fine, and he obtains the highest prices for it. At several manufacturing establishments where we happened to call, we saw or heard Mr. Watson's wool given as an example to wool-growers of what

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was wanted in quality and condition, *for fine wool*. This year it brought 50 cents per pound, sold in his neighborhood. Last year he sold it in the dirt, obtaining a price equal to 60 cents per pound for washed wool. His fleeces average over three pounds, washed. Bucks' fleeces weigh from 5 to 6½ pounds.

**PLANTING CHESNUTS.**—The rapid growth of the Chesnut, the excellence of its timber, and its fine ornamental appearance, render it a desirable object of cultivation. The fruit which it produces too is not the least consideration.

Many, however, who attempt raising the trees, partially or wholly fail in causing the seeds to germinate. This is usually owing to the seeds becoming *dry* before they are planted. A few days' exposure to dry air is sufficient to prevent their growing. Hence, as soon as they are taken from the tree they should be at once planted before drying a day, or mixed with moist sand, and kept in that condition till planted. They should not be covered more than an inch and a half deep, if the soil is heavy, nor more than two inches if it is light; but a still better way is to plant them half that depth, and then spread on a thin covering—say one inch of peat, or rotten leaves, which will keep the surface soft and moist.

It must be remembered that mice are exceedingly fond of the nuts, and if planted near grass lands, or other places frequented by mice, the young plants will be missing the next season.

## MUCH SAID IN A SMALL COMPASS.

If men of influence in society, and of power in government, would read and ponder what follows, it might go far toward bringing about a more practical system of instruction in our common schools, and of ultimately improving the face, as well as the morals of the country. Unfortunately, the men to whom the *great business of legislation* is confided, are too often men without qualification, or ambition to learn any thing beyond the readiest means of achieving a *—party triumph!*

**ONE IMPORTANT CAUSE OF NON-IMPROVEMENT IN AGRICULTURE.**—I had occasion to visit the son of a friend of mine, at a school of great respectability in a wealthy agricultural district. The master, a very intelligent person, showed me the details of his well-arranged establishment, which was certainly a pattern in every respect. On entering the well-filled school-room, he observed, that most of his scholars were farmers' sons. Glancing at his library, I inquired what books on agricultural subjects it contained? The master seemed struck with surprise (as if the thought of such books had never occurred to him,) and replied, "With shame I acknowledge, *not one*; but send me a list of such as you recommend, and I will immediately procure them." Now, I apprehend this case might be multiplied by a thousand or more. Can we wonder then that a youth who never heard the word agriculture at school, and who is seldom or never sent into different districts to be taught agriculture as a science, should go home to his parent, and follow his plan of farming—be it good, bad, or indifferent. In all other trades and professions an apprenticeship is con-



sidered essential to the acquirement of knowledge; but farming, the most necessary of all trades, is to be left to chance, or rather mischance. A system of uniformity is essential in making a hat, coat, or shoes—there are established educational rules for the church, the bar, and the senate; but agriculture, the greatest interest of all, on which our very existence depends, economically and politically, is to be like a ship without a compass, tossed about by the ever-varying gale of individual opinion, without a hope of reaching the port of Perfection. Were a youth ever so much inclined to furnish his mind with comparisons and observations of the various systems of culture in our own different counties, as well as in foreign climes, there is, under the present school system, no opportunity for his doing so; and, no doubt, he would be surprised if told that we are a century at least behind the Chinese in agricultural practice. I hope we shall soon see every school, and in fact, every farmer's parlor, possessing a few sound practical works on agriculture. I presume no man will consider he knows everything in agriculture—if he does, it is unfortunate for him. Little as I am acquainted with the subject, I am daily convinced that it is full of interest, and of such extent, that a lifetime of study and practice would find us on the wrong side of perfection.

[L. J. Mechi's Letters on Ag. Imp.]

**SHED FEEDING OF SHEEP.**—Having observed that sheep in wet weather on our downs always select the most beaten roads for their bed, it occurred to me that not only when under sheds should they lie on boards, according to your own experiment, but also that the courts to which they have daily access whilst their houses are being cleaned, should be covered, not with soft litter, but with hard chalk or sand, or other materials to form a solid bottom. My little yards attached to the sheds are floored with a sort of asphalt, made of chalk beaten small, covered with gas-tar and sand. In constructing sheds for my sheep, I have kept in view the strictest economy; and I venture to send these minute details, which I hope will serve to prove that the protection of sheep from the inclemency of the weather is within the reach of every tenant farmer. Each of these sheds contains about 50 sheep. They are erected on a very simple plan—a couple of fir poles, 12 feet long, are nailed together at the top; their extremities, at a distance of 15 feet, are driven into the ground; another couple, 10 feet distant, are united with this, and held firm by a ridge-pole nailed into and lying between the tops of the fir poles.—Side pieces are nailed parallel to the ridge-pole, and small hazel-wood is interlaced so as to support the thatch, which a laborer ties on with tartwine. The thatch in front and behind reaches to about 3 feet from the ground; behind, a bank of turf is raised to meet the thatch; the front is guarded by a hurdle, movable at pleasure, to allow the sheep to go into the court, which is of the same size as the shed. It is important that both ends of the shed should be protected with bawns only, which will secure a free ventilation, yet keep out rain.

My sheds, about 50 feet long, (not charging the straw,) cost about 41s. each. These sheds are covered with 1-inch boards, separated (each strip from the other) by  $\frac{3}{4}$ -inch intervals. The cost of the timber and mode of preparing the floor were as follows:—White pine timber was

used for its cheapness, being 1s. 3d. the cube foot, which would therefore give eleven 1-inch boards. On account of the particular width of the logs which I bought, the board was sawed into pieces 7 inches broad and 1 inch thick.—These, for economy, are hand-sawn into three parts, and are nailed upon joists at a distance of  $\frac{3}{4}$ -inch. By this plan nearly one third of timber is saved: so that each sheep, requiring 9 feet of space, lies actually on 6 feet of 1-inch board.—The cost of timber for joists, nails, and carpenters' work, raises the total expense of placing the sheep on boards to 1s. 4d. per head. Instead of sleepers, I used small blocks, 6 inches thick, to keep the rafters from direct contact with the manure. The boards are put together into frames about 10 feet by 4, so that they may be easily taken up by one man. Beneath the boards, the floor, excavated 8 or 9 inches, is puddled and made water-tight, and covered with 6 inches of saw-dust, burnt clay, or good dry mould. This receives and absorbs the manure which falls, or is swept below twice a-day. The boards, after sweeping, are watered with a solution of 3 lbs. of sulphate of iron, which instantaneously removes the odor not only of the ammonia, but of the more offensive sulphureted hydrogen. The boards should be laid perfectly flat, to prevent the sheep slipping about. The sheep are fed under the sheds, not in the courts. The results of this arrangement have been most successful, both in the health and well-doing of the sheep. It is true that I have lost four head, which seem to have died from apoplexy; but I lost the same number in the flock which were at large, and treated in the usual manner.—Though I have had more than 300 South Downs so shedded, some of them longer than 5 months, yet I have never seen any instance of lameness, even in the least degree.

[Rev. A. Huxtable—Roy. Eng. Ag. Soc. Jour.]

**ARRIVAL OF THE STOCK IMPORTED BY THE MASS. SOCIETY FOR THE PROMOTION OF AGRICULTURE.**—During the last week, the ship *Chaos* arrived at this port, in 29 days from Liverpool, having on board the stock purchased for the State Agricultural Society, by Mr. Alexander Beckett, who was sent out to England and Scotland, to make a selection of the best animals that could be obtained of the North Devon and Ayrshire breeds.

They consist of four Ayrshire cows and one bull, and four North Devon cows and one bull, and a fine calf which was dropped by one of the North Devon Cows on the passage.

The following ample daily allowance was provided for each animal for fifty days, viz.: 10 lbs. of hay, 10 lbs. of oil cake, 1 quart of bran, 1 quart of crushed oats, and 10 gallons of water. The freight bill for the cattle, together with the expense of fitting up the stable, and for water casks, independent of the food, was 140 pounds sterling, or about \$700. This, with the first cost of the cattle, and expenses of Mr. Beckett, will make the round sum of something like \$3000—a very generous outlay by the Society for the improvement of the stock of our State.

The animals are very fine looking, and we believe, gave perfect satisfaction to the President and other officers of the Society, who were present on the wharf to witness their landing.

The North Devon cows were purchased of Lord Leicester, of Holkham, Norfolk county, England; the bull, from Mr. Bloomfield, Wan-

ham, in the same county, of whose stock Mr. Colman has stated that he had seen none superior.

The Ayrshires were also thorough-bred, perfect in their kind, and the cows had the appearance of being fine milkers. Two were purchased from the stock of Mr. Andrew MacGregor, Damhead, near Kilmarnock, Scotland; one from Mr. John Young, of Kilmaurs Maine, near the same place; and one from Mr. Hamilton Capprairstone, Draghorn; the bull from Hugh Kighlongmair, near Kilmaurs, Scotland.

We have seen many fine, high-bred animals, and have formed an opinion as to what points are desirable in dairy stock; and according to the views we entertain, we think the selection Mr. Beckett has made highly creditable to his judgment, and of which the Society may be justly proud. Surely, the object which the Society have in view, of improving our New England stock, is one highly commendable, and we have no doubt will be justly appreciated by the agricultural community. [N. E. Farmer.]

**DISEASE IN POTATOES.**—The attention of every body is so absorbed by the POTATO-MURRAIN, that we should be wanting in our duty towards the public if we did not continue to advert to the melancholy subject. Not that we have much to add either by way of advice or consolation; for the topics connected with the disease have all been already touched upon, more or less amply, by ourselves or our correspondents; and every week's experience satisfies us that there is little, if anything, to modify in the opinions we have ourselves already expressed.

The mischief is, undoubtedly, extensive to a most alarming degree. If we estimate the amount of loss at five-sixths, we shall hardly exceed the fact. In many places the crop is hardly worth the digging; in others it is totally putrid; in many more, it seems to be spreading fast; and, as we mentioned last week, it has certainly broken out in Ireland. "All my Potatoes," says a correspondent near Dublin, "as well as those of the poor people here, are destroyed by the murrain. Two days ago, 12 acres were still safe; they are now gone." Germany, Holland and Belgium, are in the same state as England. A dysentery which has already appeared at Erfurt, is said, by the *Gazette de Cologne*, to be traceable to the use of bad Potatoes. The Belgian papers speak of cholera at Ghent, produced in the same way. Poland, according to the same journals, is so threatened by famine, that the Prussian authorities on the frontier have been obliged to take precautionary measures for keeping the starving population out of the Prussian territory; and, finally, the authorities of some districts in France and Germany, have either prohibited or threatened to prohibit the exportation of Potatoes, lest there should be no seed for another year.

Such is the state of the case. It is useless now to speculate on the first cause of this murrain. Our original opinion was, we believe, correct; at least, we have not at present seen anything to shake our confidence in it; and we find that, with the single exception of Professor MORREN, the universal opinion among the Belgian cultivators is the same as ours, except when meteors, electricity, and other unknown forces, are appealed to. It is true that a minute fungus has made matters infinitely worse;

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but that is, we quite believe, a secondary cause. The consideration of this part of the question may, however, be very well deferred. What we have now to look to is an immediate remedy for the evil. [London Gardeners' Chronicle.]

**WEIGHT OF CORN PER ACRE.**—Capt. Randall, of New-Bedford, has recently published in the N. E. Farmer an account of the weight of his corn sown broad-cast on a couple of acres and some rods. He says 35 tons of manure were spread upon each acre. Ten bushels of white, flat, Maryland corn were sown on two acres and 32 rods. The whole was well plowed and repeatedly harrowed, and a heavy roller was applied. Three separate rods of this corn were cut and weighed, and the average weight per rod was 388 lbs. This gives between 31 and 32 tons per acre, sown broad-cast, very highly manured and land well prepared.

We think 40 tons per acre may be grown by sowing in drills, but the labor would be more, though the seed would not cost one quarter as much. Capt. Randall says he fed out his corn from 2 acres and 30 rods to 20 cows, three other cattle, and five calves, and it kept them 7 weeks and 5 days, with what they could pick in a dry pasture. And he is satisfied that this corn was equal to 15 tons of the very best of English hay.

But we think Capt. R. puts a wrong estimate on this fodder from his corn field. Fifteen tons of hay would keep his stock through half the winter without any aid from the pasture ground, yet while all his stock could bite, bushes and all, his corn kept his stock but one third of the time that cattle are fed in winter.

Cattle will find something in the driest pasture and will partially fill themselves there, even though you feed out the richest products of the farm.

Again, the 2 acres and 32 rods of ground, with this high manuring, would have produced this season 160 bushels of shelled corn, beside all the stalks and husks. This corn dealt out in meal would make an allowance of 6½ bushels to each of the 24 cattle for 7 weeks and 5 days—or 213 quarts of meal each. That is, about three quarts of meal per day for each animal besides the husks and stalks. Should we not think it costly feeding to give out so much in addition to what could be obtained in the pasture?

We wish to see more experiments made on feeding out green corn, and we therefore make these remarks on the experiment of Capt. Randall. [Mass. Ploughman.]

**PRICE OF GUANO IN ENGLAND.**—The Mark-Lane Express of Sept. 22d, quotes African guano, about 1000 tons sold at £4 5s. to £7—[\$21 25, a \$35].—Peruvian £9 10s.—\$47 50; Nitrate of Soda 19s. a 19s. 6d. per hundred.

**Guano.** At the meeting of the Monmouth Farmers' Club, Sept. 3, 1845, it was resolved unanimously:—"That the best thanks of this club be given to the Editors of the *Gardeners' Chronicle and Agricultural Gazette*, for their exposure of the infamous practices of dealers in guano in adulterating it.

Some decided encouragement should be offered for the exposure of frauds in selling seeds and fruit-trees in this country. You will hear many complain of infamous impositions, and yet none will publicly stigmatize the miscreants



DEATH OF EARL SPENCER. THE GREAT  
ENGLISH FARMER.

It has been truly said that the plow is of no party, neither is it of any country. Its uses and its fruits are of such universal application and so beneficent, that all friends of Agriculture may cordially join in mourning the death of a patron so elevated in rank, yet so affable in his deportment—so liberal in the use of his ample means, and so influential by his personal example as was Earl Spencer, whose death is announced in the last English journals.

It seems but as yesterday that we received his autograph letter, from which an extract was taken in a note made to the memoir of Judge Peters. By the last incident that we could have expected or desired, we are now relieved from the considerations of delicacy which then restrained us from giving the name of the writer—"It being impossible (says he) that any Englishman can desire more earnestly than I do that the friendly relations between our two countries shall be permanent."

As the noblest oak towers in the forest, so stood the deceased, conspicuous among his brother Farmers. How slowly is the chasm filled which is left by the removal of such men—and must we even say of them—good and useful as they are in their day and generation—

"What though we wade in wealth or roll in fame;

"Earth's highest station ends in "Here he lies,"

"And "dust to dust" concludes her noblest song!

EUROPEAN AGRICULTURE AND RURAL ECONOMY FROM PERSONAL OBSERVATIONS. By HENRY COLMAN—To be completed in ten numbers of not less than 100 pages each number.—Terms, \$5 for the whole.

Of this valuable work we have just received part IV. The contents relate principally to the great FAIRS and MARKETS for Cattle in and out of London—for Cattle and Grain; Vegetables and Fruits; Dead Meat Markets, and Market-gardens, with Chapters on Corn duties, and the mode of adjusting Labor.

Every one at all in the habit of reading English Agricultural papers, will have experienced a desire to have a nearer view of these great marts for the substantial business transactions, and here will be found a picture than all more graphic and minute than ever, or could be had in any way, except by personal inspection.—The Chapter on Market-gardening is concluded with an observation to which we invite the notice of the reader—the public mind in our own country is ardently taking the same direction, and the time is coming when men seeking employment as Farmers and Gardeners, will have to bring proof of having been in like manner educated for the business.

"The science of Gardening," says Mr. Colman, "is here a substantial science, and young men are

as carefully educated in its various departments, as in any of the sacred Professions, and receive a patronage according to their skill and merit. Under such circumstances the Market Gardens near London are managed with a skill and enterprise worthy of all praise, and sure of reward much more substantial."

THE NATIONAL MAGAZINE AND INDUSTRIAL RECORD. Edited by REDWOOD FISHER, New-York.

This work, which was commenced in June last, completes the first volume of about 300 pages, with the November number. Mr. Fisher is well known to the friends of Domestic Industry as an able writer in the cause, and the numbers of his magazine which have appeared contain many important articles on manufactures and commerce from his own pen, as well as contributions from some of the ablest writers in the United States. One feature of the magazine must be particularly interesting to all who are engaged in manufactures; namely, to notice such places in this country as have been built up by the interests of Manufactures or Commerce. Sketches of New Bedford and Lowell, in Massachusetts; Paterson and Somerville, in New-Jersey; Chicago, Illinois; Cleveland, Ohio, &c. have already appeared in the pages of the work. The Mining of Iron, Copper and Coal in the United States have also been the subjects of several important articles. We wish success to this enterprise of Mr. Fisher, commensurate with his admitted talents and industry.

DUTCH CORN-LAW.—*The Hague*, Sept. 15. —The disease which has attacked the potatoes in a great part of the kingdom has attracted the attention of the government. It has induced an inquiry into the causes and the character of the disease, and the means of preventing a rise in the prices of articles of subsistence.

The *Staats Courant* publishes a royal ordinance, dated the 14th of September, stating the measures taken by the government for the importation of articles of food:

"We, William II., &c. &c., seeing Article 2 of the law of 19th June, 1845;

"Having taken into consideration the unfavorable prospect of the crop of potatoes, which are one of the principal articles of food for the most numerous class; and that the general interest, as well as that of the commerce and manufactures of the country, requires that we should prevent by all possible means a rise in the price of provisions;

"Having likewise taken into consideration that in this respect the government should take no other measures than such as may tend to encourage as much as possible the importation of provisions for the working classes;

"On the report of our Minister of Finance, on the 9th September, 1845,

"Having consulted with our Minister of the Interior, with advice of our Council of State,

"Have decreed and decree—



"Art. 1. From the 15th of September, the import duties on the following articles are:—

"Potatoes, five cents per 10 mudd.

"Barley, one cent per 100 lbs.

"Rice, one cent per 100 lbs.

"Beans, peas, and lentils, 10 cents per last.

"Groats and pearl barley, three florins per 100 lbs.

"Flour, five florins per 100 lbs.

"This scale is fixed on all parcels of these articles, which shall be declared on importation on and after the 15th of September.

"Art. 2. We shall propose to the States-General in the next session the necessary measures to give legal validity to the regulations of Article 1 of the present decree, and also to fix till the 1st of June, 1846, or later if it should be judged necessary, the import duty on rye and buckwheat, at the rate fixed for the present month of September, of 15 cents. per mudd, and on wheat and rye, for the same period, at 25 and 10 cents. per mudd on the minimum of the duties fixed on these kinds of grain, by the law of the 29th December, 1834.

"Our Minister of Finance is charged with the execution of the present decree, which is to be inserted in the bulletin of the law, and copies sent to our Minister of the Interior, and to the Council of State.

(\*Mudd is about four English bushels. This

reduction in the duties is very considerable.—By the tariff now suspended they are on potatoes five cents per mudd; on barley and rice 30 cents per 100 lbs.; on beans 7½ florins per last; on groats, &c., 10 florins per 100 lbs.; on wheat, rye, and flour, 20 florins per 100 lbs. and on potato-flour 10 florins per 100 lbs.)

The *Staats Courant* has a very long article on the subject. It states that the produce in 1843 was 14,662,571 mudds, and in 1844, 13,552,030 mudds, and that from the returns already made, it seems probable that two-thirds, if not three-fourths of the crop are spoiled by the disease.

It is believed that the crops of rye, wheat, barley, buckwheat, beans, and peas will, on the whole, not fall short of those of last year.

REMOVING BEES.—Where the queen-bee is put the rest of the bees will follow: set the hive where there is only a faint light; turn it up, and as the queen will make her appearance first, take and place her in an empty hive, and she will be followed by the rest of the bees.

## PRICES CURRENT.

[Corrected, October 22, for the *Monthly Journal of Agriculture*.]

|                                    |               |                                       |                |
|------------------------------------|---------------|---------------------------------------|----------------|
| ASHES—Pots, 1st sort.....          | 3 87½ @ 3 93½ | Staves, White Oak, pipe.....          | 45 — @ 47 —    |
| Pearls, 1st sort, '45.....         | 4 12½ @ 4 15  | Staves, White Oak, hhd.....           | 38 — @ 40 —    |
| BEESWAX—American Yellow ..         | — @ — 30      | Staves, White Oak, bbl.....           | 30 — @ —       |
| CANDLES—Mould, Tallow..            | 9 @ — 11      | Staves, Red Oak, hhd.....             | 30 — @ 32 —    |
| Sperm, Eastern and City.....       | 27 @ — 28     | Hoops.....                            | 25 — @ 30 —    |
| COTTON—From.....                   | 6½ @ — 9½     | Scantling, Pine, Eastern.....         | 14 — @ 16 25   |
| COTTON BAGGING—American ..         | 12 @ — 13     | Scantling, Oak.....                   | 30 — @ 35 —    |
| CORDAGE—American.....              | 11 @ — 12     | Timber, Oak.....                      | 25 @ — 37      |
| DOMESTIC GOODS—Shirtings, ½ y.     | 5 @ — 11      | Timber, White Pine.....               | 18 @ — 25      |
| Sheetings.....                     | 6½ @ — 15     | Timber, Georgia Yellow Pine ..        | 30 @ — 35      |
| FEATHERS—American, live.....       | 30 @ — 34     | Shingles, 18 in.....                  | 1 75 @ 2 —     |
| FLAX—American.....                 | 7½ @ — 8      | Shingles, Cedar, 3 feet, 1st quality. | — @ 24 —       |
| FLOUR & MEAL—Genesee, ½ bbl.       | 5 37½ @ 5 43½ | Shingles, Cedar, 3 feet, 2d quality.  | 20 — @ 22 —    |
| Troy.....                          | 5 37½ @ 5 43½ | Shingles, Cedar, 2 feet, 1st quality. | — @ 17 50      |
| Michigan.....                      | 5 37½ @ —     | Shingles, Cedar, 2 feet, 2d quality.  | 15 — @ 16 —    |
| Ohio, flat hoop.....               | 5 37½ @ —     | Shingles, Cypress, 2 feet.....        | 11 — @ 13 —    |
| Ohio, Heywood & Venice.....        | 6 — @ 6 12½   | Shingles, Company.....                | — @ 29 —       |
| Ohio, via New-Orleans.....         | — @ —         | MUSTARD—American.....                 | 16 @ — 31      |
| Pennsylvania.....                  | — @ —         | NAILS—Wrought, 6d to 20d... ½ lb.     | 10 — @ 12½     |
| Brandywine.....                    | 5 50 @ 5 75   | Cut, 4d to 40d.....                   | 4 @ — 4½       |
| Georgetown.....                    | 5 50 @ —      | PLASTER PARIS—½ ton.....              | 2 50 @ 2 62½   |
| Baltimore City Mills.....          | 5 25 @ 5 37½  | PROVISIONS—Beef, Mess, ½ bbl...       | 7 75 @ 8 —     |
| Richmond City Mills.....           | 6 25 @ —      | Beef, Prime.....                      | 4 75 @ 5 —     |
| Richmond Country.....              | 5 25 @ 5 37½  | Pork, Mess, Ohio, new.....            | — @ 13 75      |
| Alexandria, Petersburg, &c.....    | 5 25 @ 5 37½  | Pork, Prime, Ohio, old and new..      | 10 12½ @ 10 50 |
| Rye Flour.....                     | 3 50 @ 3 75   | Lard, Ohio.....                       | 8 @ — 8½       |
| Corn Meal, Jersey and Brand....    | 2 87½ @ 3 12½ | Hams, Pickled.....                    | 7 @ — 7½       |
| Corn Meal, Brandywine..... hhd.    | — @ 13 —      | Shoulders, Pickled.....               | 5½ @ — 5½      |
| GRAIN—Wheat, Western.. ½ bush.     | 1 — @ 1 10    | Sides, Pickled.....                   | — @ —          |
| Wheat, Southern..... new           | 1 — @ 1 10    | Beef, Smoked.....                     | 8 @ — 8½       |
| Rye, Northern.....                 | 75 @ — 76     | Butter, Orange County.....            | 20 @ — 22      |
| Corn, Jersey and North... (meas.)  | 68 @ — 70     | Butter, Western Dairy.....            | 15 @ — 17      |
| Corn, Southern..... (measure)      | 65 @ — 66     | Butter, ordinary.....                 | 12 @ — 14      |
| Corn, Southern..... (weight)       | 66 @ — 68     | Cheese, in casks and boxes.....       | 7 @ — 7½       |
| Oats, Northern.....                | 42 @ — 43     | SEEDS—Clover.....                     | 8½ @ — 9½      |
| Oats, Southern.....                | 35 @ — 37     | Timothy.....                          | 12 — @ 15 —    |
| HAY—North River..... bales         | 70 @ — 80     | Flax, Rough.....                      | — @ —          |
| HEMP—American, dew-rotted.. ton    | 85 — @ 95 —   | SOAP—N. York, Brown..... ½ lb.        | 3½ @ — 5½      |
| " " water-rotted.....              | 125 — @ 175 — | TALLOW—American, Rendered... ½ lb.    | 7½ @ — 7½      |
| HOPS—1st sort, 1845.....           | 12½ @ — 15    | TOBACCO—Virginia.....                 | 3 @ — 6        |
| IRON—American Pig, No. 1.....      | 32 50 @ 40 —  | North Carolina.....                   | 3 @ — 5        |
| " Common.....                      | 27 50 @ 32 50 | Kentucky and Missouri.....            | 3 @ — 7        |
| LIME—Thomaston..... ½ bbl.         | 1 05 @ 1 06½  | WOOL—Am. Saxony, Fleece.. ½ lb.       | 35 @ — 37½     |
| LUMBER—Boards, N.R., ½ M. ft. clr. | 35 — @ 40 —   | American Full Blood Merino.....       | 32 @ — 34      |
| Boards, Eastern Pine.....          | 10 — @ 11 —   | American ½ and ¾ Merino.....          | 27 @ — 29      |
| Boards, Albany Pine..... ½ pce.    | 8 @ — 18      | American Native and ¾ Merino...       | 24 @ — 25      |
| Plank, Georgia Pine..... ½ M. ft.  | 33 — @ 40 —   | Superfine, Pulled.....                | 28 @ — 30      |





GAME FOWLS



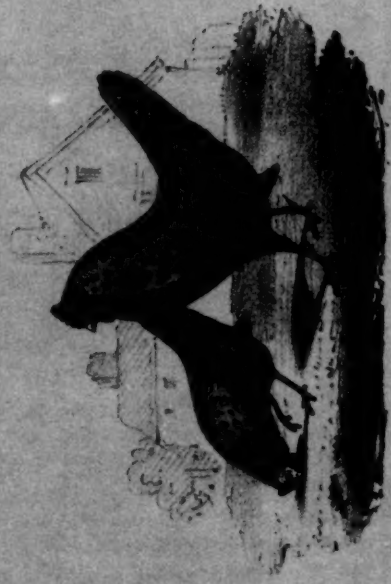
POLAND FOWLS



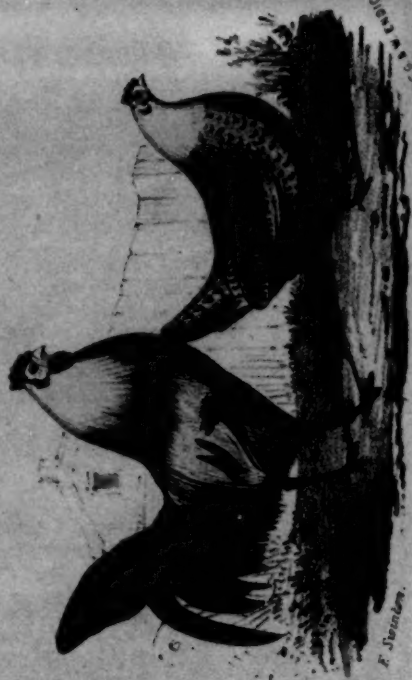
MALAYS



DORKING FOWLS



BANTAM OR PHEASANT FOWLS



BOLTON GREYS

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